

R U L E S

FOR

DRAWING

The several PARTS of

ARCHITECTURE,

IN A

More exact and easy manner than has been heretofore practised, by which all FR A C T I O N S, in dividing the principal M E M B E R S and their Parts, are avoided.

By J A M E S G I B B S.

The SECOND EDITION.

L O N D O N :

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TO THE

RIGHT HONOURABLE

EDWARD

Earl of OXFORD

AND

Earl MORTIMER,

Baron HARLEY of WIGMORE, &c.

My LORD,

YOUR Lordship's extensive Knowledge and good Taste command the Esteem of all that profess or love the Liberal Arts and Sciences; but more immediately of those who are personally known to Your Lordship.

I should

I should shew myself unworthy of that Honour, did I omit this Opportunity of publicly testifying my Regard to so generous and universal a Patron, as well as the grateful Sense I shall ever retain of particular Obligations: To which Your Lordship will still add by receiving the following Sheets into the same Protection, with which the Author has been always honoured.

I am with the greatest Respect,

My LORD,

Your Lordship's

Most obliged and

Most obedient humble Servant,

JAMES GIBBS.



GEORGE R.

GEORGE the Second, by the Grace of God, King of Great-Britain, France and Ireland, Defender of the Faith, &c. To all to whom these Presents shall come, Greeting: WHEREAS James Gibbs drawing the several parts of *Architecture*, in a more exact and easy manner than has been heretofore practised; by which all Fractions in dividing the principal Members and their Parts are avoided; and hath humbly besought Us to grant him our Royal Privilege and Licence for the sole printing and publishing thereof, for the Term of Fourteen Years: We being willing to give all due Encouragement to Works of this nature, are graciously pleased to condescend to his Request. And we do therefore by these Presents, so far as may be agreeable to the Statute in that behalf made and provided, grant unto him the said James Gibbs, his Executors, Administrators, and Assigns, Our Licence for the sole printing and publishing the said Work, intituled, *Rules for drawing the several Parts of Architecture*, in a more exact and easy manner than has been heretofore practised; by which all Fractions, in dividing the principal Members and their Parts, are avoided, for the Term of Fourteen Years, to be computed from the Date hereof; strictly forbidding all our Subjects within our Kingdoms and Dominions to reprint or abridge the same, either in the like or any other Volume or Volumes whatsoever, or to import, buy, vend, utter, or distribute any Copies thereof, reprinted beyond the Seas, during the aforesaid Term of Fourteen Years, without the Consent or Approbation of the said James Gibbs, his Heirs, Executors and Assigns, under their Hands and Seals first had and obtain'd, as they will answer the contrary at their Perils; whereof the Commissioners and other Officers of our Customs, and the Master, Wardens, and Company of Stationers are to take notice, that due Obedience be render'd to Our Pleasure herein declared.

Given at Our Court at St James's the nineteenth Day of May 1732.
in the Fifth Year of Our Reign.

By His Majesty's Command,

HARRINGTON.

NOTICE

James C. Smith

of the County of ...

do hereby certify that the within and foregoing is a true and correct copy of the ...

Witness my hand and seal this ... day of ...

at ... in the County of ... State of ...

James C. Smith, Clerk of the County of ...

My commission expires the ... day of ...

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TO THE

READER.

UPON Examination of the common ways of drawing the Five Orders of Architecture, I thought there might be a Method found out so to divide the principal Members and their Parts, both as to their Heights and Projections, as to avoid Fractions. And having tried one Order with success, I proceeded to another, till at length I was satisfied it would answer my intention in all; and I doubt not, but that the Method here proposed will be acknowledged by proper Judges to be the most exact, as well as the easiest, that hath as yet been published.

I have here sufficiently explained the Arcades and Intercolumnations of each Order, and set down a Rule for placing Orders above Orders. I have also given Rules for drawing Doors, Gates, Windows and Chimney-pieces of different kinds, Cornices and their Profiles, Architraves, Bases, Imposts, Surbases, Frames for Pannels or Pictures in Rooms and other sorts of Mouldings and the Proportions of Ballusters; as also Scrolls, Frets or *Guilochis*, and Pannelling for Cielings, both Flat and Circular.

In

In the common manner of drawing the Orders, the Diameter, or sometimes the Semidiameter, of the Column, is called a Module; and this Module is divided into Parts or Minutes, as into twelve, eighteen, twenty four, thirty and sixty parts, according to different Authors. *Palladio* in dividing and adjusting his Orders, has no doubt excelled the rest, whom I have therefore followed. He has divided the Diameter of his Column, which he calls his Module, into sixty Minutes, and subdivided them into Seconds, Thirds, and Fourths. This is supposed to be the Method of the Antients in composing their Designs; but it is very difficult to beginners and such as are but little skill'd in Arithmetick: And certainly the parts consisting of so many Fractions may occasion mistakes in those who copy the Orders of *Palladio*, besides the difficulty of dividing those small parts with Compasses. But by this method of dividing the Orders Mechanicaly into equal parts, Fractions are entirely avoided; which will be found so beneficial to Workmen in drawing any part at large (as shall be explain'd by the following Directions) that when they are once accustomed to it, they will never follow any other. But before I proceed to the Explanation of the Plates, it may not be improper to premise something in general touching Columns, and their Entablatures and Pedestals.

R U L E S

For Drawing the several Parts of

ARCHITECTURE, &c.

Of C O L U M N S and their Measures.

IN all Compositions of Architecture, the Column, being the principal Figure, should be perfect in its Proportions, as they are taught us by the Antients, *viz.* That the height of the Column should be measured by its Diameter without a Remainder; that is to say, the height of the Column should consist of such a number of times its Diameter without a Fraction, according to the different Proportions of each Order; of which there are Five, none exceeding ten Diameters in height, nor less than seven: Those of eight and ten are accounted perfect, and the first invented by the Antients; the rest are inferior. Their Names and Proportions are as follows, including Base and Capital:

The <i>Tuscan</i> is in height	7	Diameters,
The <i>Doric</i> ———	8	Diameters,
The <i>Ionick</i> ———	9	Diameters,
The <i>Corinthian</i> ———	10	Diameters, and
The <i>Roman</i> or <i>Composite</i>	10	Diameters.

Of ENTABLATURES.

HAVING settled a Rule for the Proportions of Columns, the Entablatures must bear a proportion to them in each Order; for which *Palladio* has given a Rule which cannot undergo any considerable

B

change,

change, without altering the just Proportions of Columns. He makes the Entablatures of the *Tuscan* and *Doric* to be to their Columns as one to four, and the *Ionick*, *Corinthian* and *Composite*, as one to five. The Proportion of the Entablature in each Order is explained as followeth:

One Diameter and $\frac{1}{4}$, is the height of the Entablature of the *Tuscan* Order; which is $\frac{1}{2}$ of Seven Diameters. Two Diameters is the height of the Entablature of the *Doric*; that being $\frac{1}{2}$ of Eight Diameters. One Diameter and $\frac{1}{2}$ is the height of the Entablature of the *Ionick*; which is $\frac{1}{2}$ of nine Diameters. Two Diameters is the height of the Entablature of the *Corinthian* Order; that being $\frac{1}{2}$ of Ten Diameters. The Entablature of the *Composite* has the same proportion with that of the *Corinthian*.

OF PEDESTALS.

THE Entablature being a part proportionable to its Column, and the Pedestal an addition to both, it should be considered as a part of the Column and Entablature taken together; therefore the height of the Column and Entablature being divided into four equal parts, one of them shall be the height of the Pedestal. This Rule is to be observed through all the Five Orders, by which the Pedestal will have an agreeable effect with the Whole and all its Parts. *N. B.* The Pedestal may be made lower when necessity requires, but not otherwise.

Of the FIVE ORDERS in general, and their principal Parts.

PLATE I.

THE Five Orders in general are each divided into three principal parts from the Base-line upwards, and are named as follows;

A B, the Pedestal,
B C, the Column,
C D, the Entablature.

Each of these is divided into three essential Parts, *viz.*

- | | | |
|---------------------------|---------------------------|------------------------------|
| 1. The Pedestal into | 2. The Column into | 3. The Entablature into |
| 1. <i>a b</i> , the Base, | <i>d e</i> , the Base, | <i>g h</i> , the Architrave, |
| 2. <i>b c</i> , the Die, | <i>e f</i> , the Shaft, | <i>h i</i> , the Frize, |
| 3. <i>c d</i> , the Cap. | <i>f g</i> , the Capital. | <i>i k</i> , the Cornice. |
| | | Other |

Other smaller divisions are called Members, whether they be Square or Curvilinear, and are more or less in number according to the several Orders ; as will be observed particularly in the Explanation of each of them.

The General Proportions of the TUSCAN Order.

PLATE I. N^o. I.

TAKE any height proposed for this Order upon a straight line, and divide it into five equal parts ; one of those parts shall be the height of the Pedestal, according to the outer division of the Scale on the left hand. Then divide the other four parts above it into five parts, according to the inner division of that Scale ; the upper fifth part shall be the height of the Entablature, and the other four parts betwixt the Pedestal and Entablature, shall be the height of the Column, including its Base and Capital ; and this height being divided into seven parts, one shall be the Diameter or thickness of the Column. The Base and Capital are each in height a Semidiameter of the Column. The Entablature is divided into seven parts ; two of which go to the height of the Architrave, two to the Frieze, and three to the Cornice. The Column must be divided into three Parts ; from the top of the lower division, it is diminished at the upper part $\frac{1}{2}$ of its semidiameter on each side. From the diminished part draw two upright lines parallel to the middle line, through the Capital and Entablature, and from those lines mark the Projections of the Capital, Architrave and Cornice. The Diameter of the Column at the smallest part a-top being divided into four equal parts, one of them is the projection of the Capital. The Architrave projects $\frac{1}{2}$ of its height ; and the height and projection of the Cornice are equal. The Base of the Column projects on each side $\frac{1}{2}$ of its Semidiameter. From the extremity of the projections of the Base, let fall on each side a line to the bottom of the Plinth of the Pedestal ; that will give the breadth of the Die. Divide the height of the Pedestal into four parts ; one is the height of the Plinth, half the height of one of them is the height of the Cap, and one third of one of them is the height of the Base of the Pedestal. The projection of the Base is equal to its height, and the Cap projects the same as the Base. This Paragraph well understood will make the rest easy.

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The general Proportions of the DORICK Order:

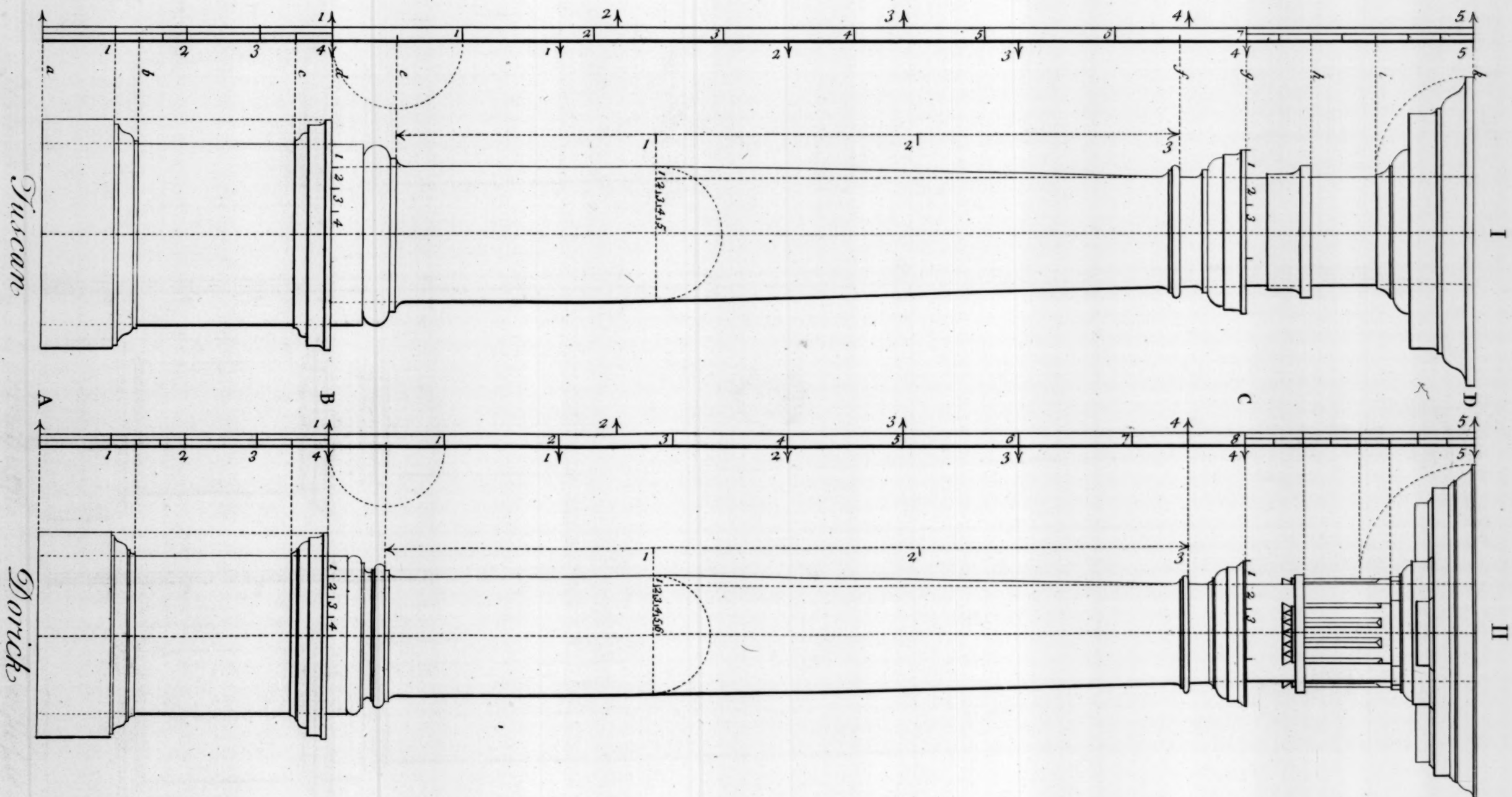
PLATE I. N^o. 2.

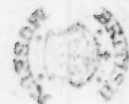
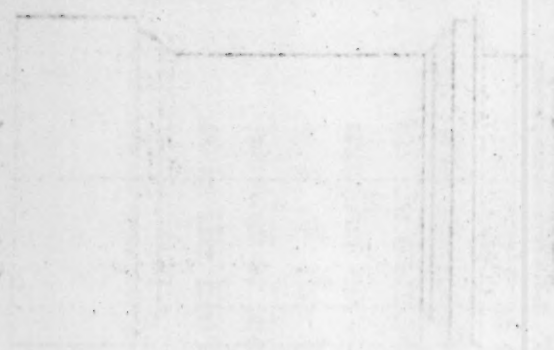
TAKE any height upon a straight line, as in the *Tuscan* Order, and divide it into five equal parts; one of them is the height of the Pedestal: The other four parts are to be divided into five parts, one of which is the height of the Entablature; and that height is divided into eight parts, two of which give the Architrave, three the Frize, and three the Cornice. The height of the Column is divided into eight parts, one of which is the Diameter of the Column. The Base and Capital are each in height a Semidiameter of the Column. The Base of the Column projects on each side $\frac{1}{4}$ of the Semidiameter; which gives the breadth of the Die of the Pedestal. The Base and Cap of the Pedestal, as to their heights, are the same as in the *Tuscan* Order, as also their projections. The Column diminishes $\frac{1}{4}$ of its Semidiameter on each side from the third part of its height to the top. The Capital projects $\frac{1}{4}$ of the Diameter of the Column at the smallest part. The Architrave projects $\frac{1}{4}$ of its height; and the projection of the Cornice is equal to half the height of the whole Entablature.

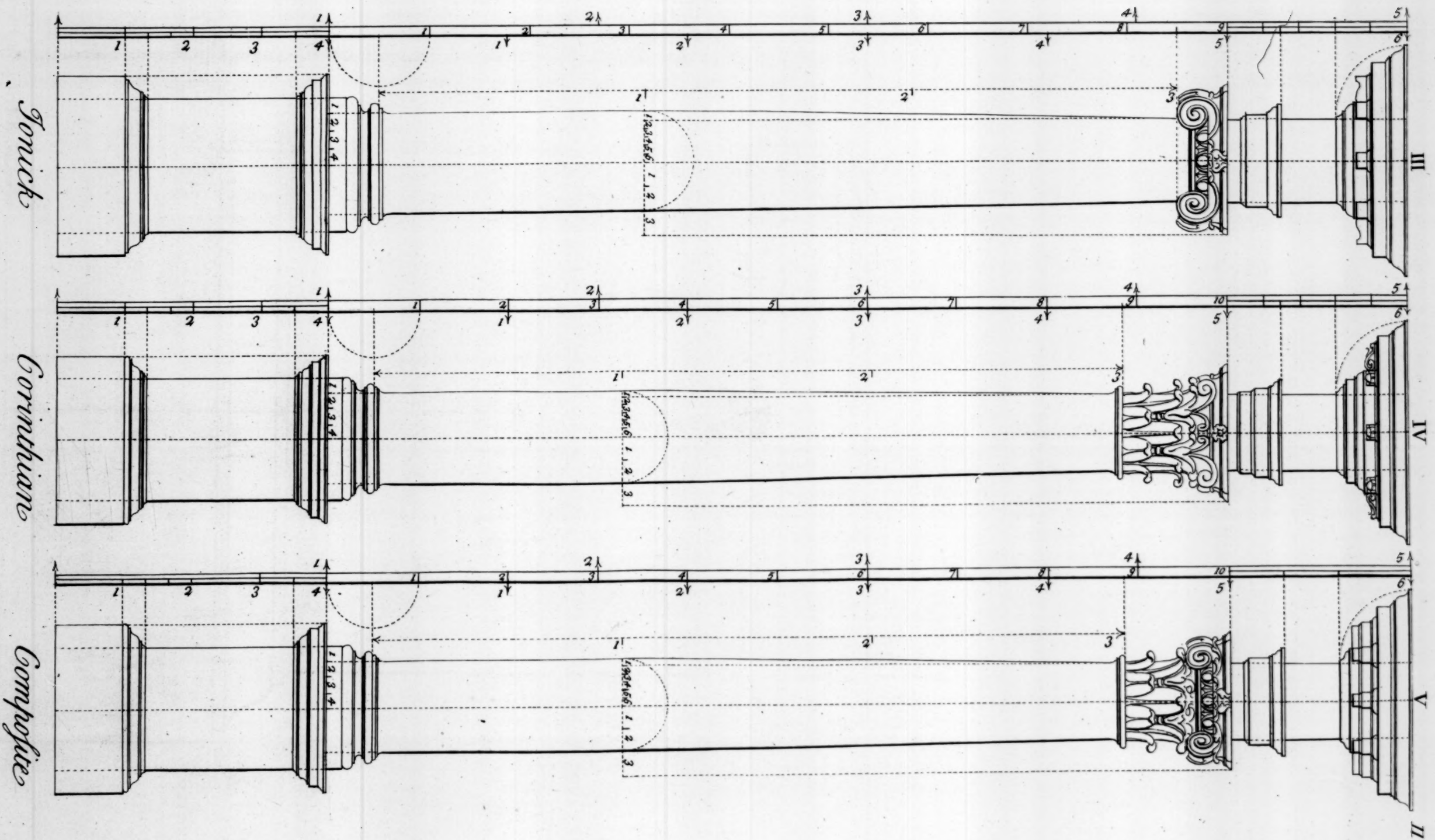
The general Proportions of the IONICK Order.

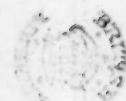
PLATE II. N^o. 3.

TAKE any determined height, and divide it into five equal parts; one of those parts is the height of the Pedestal, as in the foregoing Orders; the other four being divided into fix parts, one of them is the height of the Entablature. The height of the Column being divided into nine parts, one of them is the Diameter of it. The Base and Capital are each in height a Semidiameter of the Column. The Column diminishes on each side $\frac{1}{4}$ of its Semidiameter. The projection of the Base is $\frac{1}{4}$ of the Semidiameter of the Column; and that determines the breadth of the Die of the Pedestal. The other parts of the Pedestal are as in the *Dorick* and *Tuscan* Orders. The height of the Entablature is divided

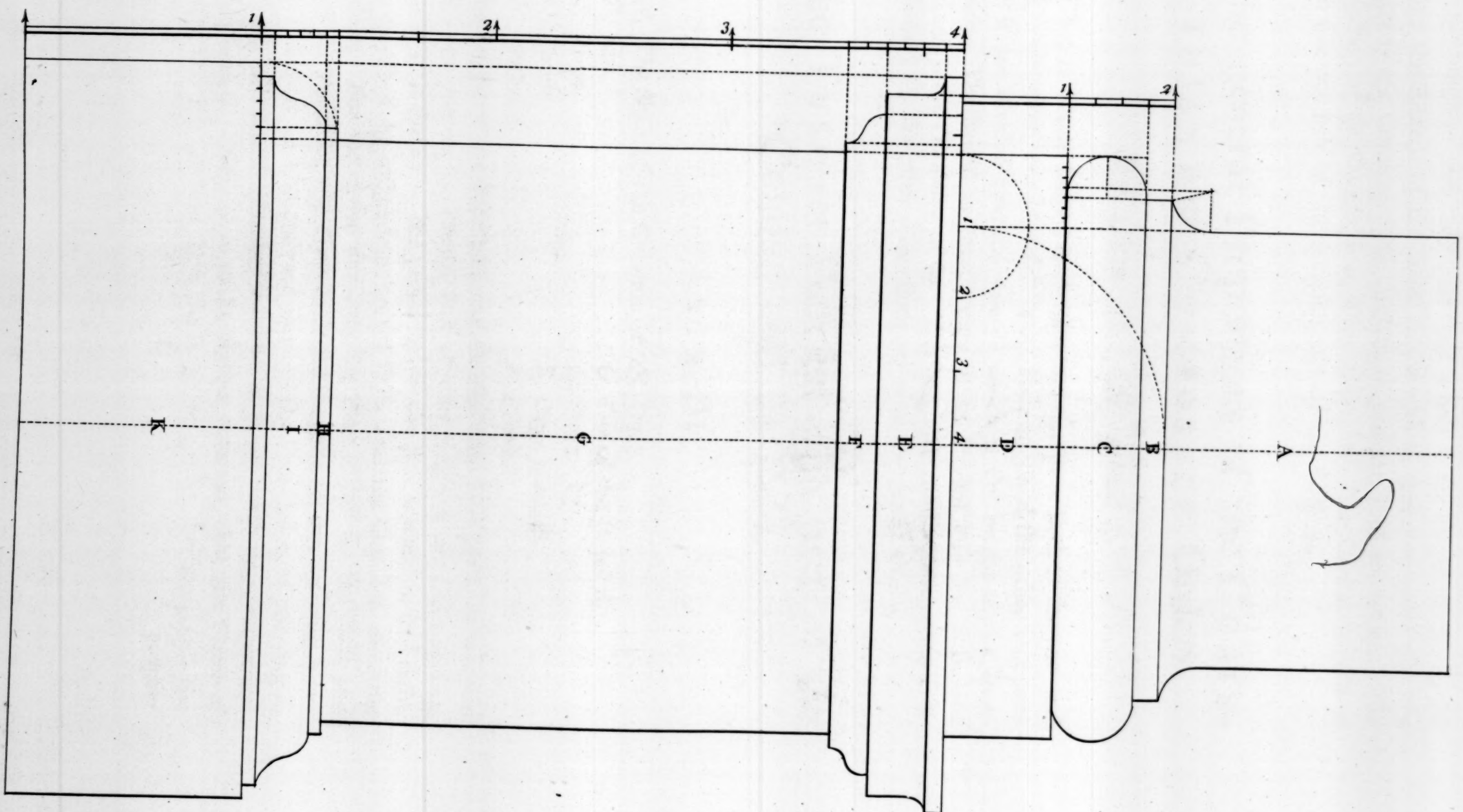


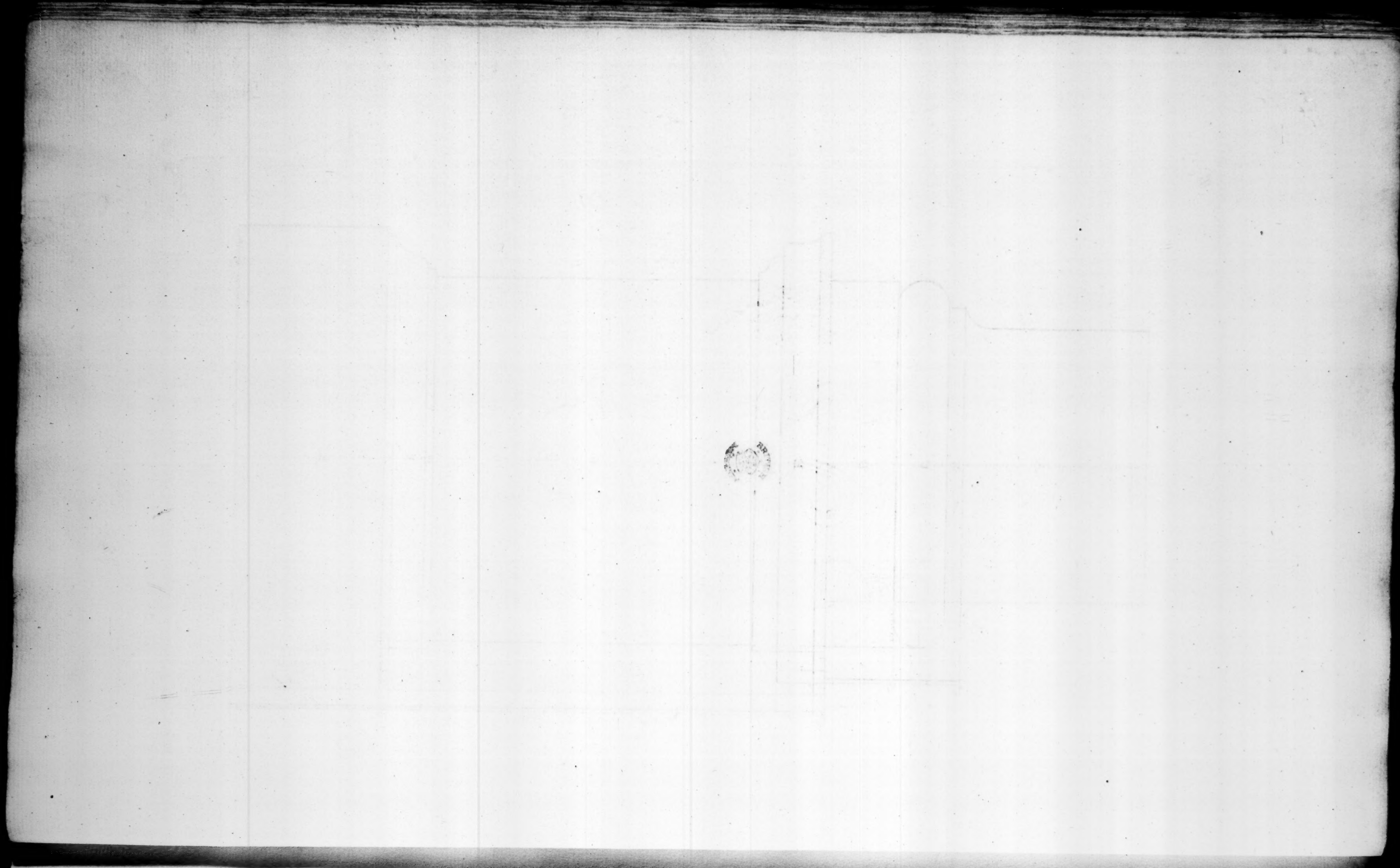






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divided into five parts, one part and a half is the height of the Architrave; the Frize is of the same height with it, and two parts give the height of the Cornice. The Architrave projects $\frac{1}{4}$ of its height. The Projection of the Cornice is equal to its height. The Capital projects on each side one half of the Semidiameter of the Column.

The general Proportions of the CORINTHIAN and COMPOSITE Orders.

PLATE II. N^o. 4 and 5.

THE whole height is divided into five parts both in the one and the other, one of which is the Pedestal; and the other four parts over it are divided into fix, one of which is the height of the Entablature. The height of the Column being divided into ten parts, one of them is the Diameter of it. The height of the Capital is one Diameter and $\frac{1}{2}$; the other dimensions are as in the *Ionick* Order.

The TUSCAN Pedestal with part of the Column and its Base.

PLATE III.

<i>A</i> , The Shaft of the Column.	<i>F</i> , Ogee.
<i>B</i> , Lift.	<i>G</i> , Die of the Pedestal.
<i>C</i> , <i>Torus</i> .	<i>H</i> , Fillet.
<i>D</i> , Plinth.	<i>I</i> , Ogee reversed.
<i>E</i> , Platband.	<i>K</i> , Plinth.

The height of the Pedestal being divided into four parts, as was said before, one goes to the Plinth, half of that height is the *Cima* or Cap, and $\frac{1}{2}$ of it is the Base; the projection of the Base is equal to its height, as is described by a Quadrant on the Base, and the Cap has the same projection. For the lesser divisions, see Plate XXIV for the Base and Cap of the Pedestal, and Plate XXV for the Base of the Column.

This Method shall be observed through the Five Orders of referring to the Plate, where each Member is drawn at large, with the Geometrical Rule to form it. And it is to be further observed, that the Plates of Pedestals and Entablatures shew the larger or grosser divisions, and the

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propor-

proportion one part bears to another; as for example, how many parts the Cornice is in proportion to the Architrave and Frize, and the Cap to the Pedestals; as also how the members are to be enriched: But when the particular parts are to be exactly drawn, recourse must be had to the Plates refer'd to, where they are drawn at large; as the Bases, Caps, Architraves, Cornices, &c. and you are not to trust to the small divisions marked here on the Plates of Pedestals and Entablatures.

The Entablature of the TUSCAN Order, with the Capital and part of the Column.

PLATE IV.

THE height of the Entablature is divided into seven parts; two go to the Architrave, two to the Frize, and three to the Cornice. The Cornice projects as much as it is in height, and is divided into three principal parts; for which I must refer you to the next Plate, where it is drawn at large, and for the Architrave to Plate XXVI.

Names of the Members of the Entablature.

<i>A</i> , <i>Cima recta</i> with a Fillet.	<i>H</i> , Lower <i>Fascia</i> .
<i>B</i> , <i>Corona</i> with a Lift over it.	<i>I</i> , <i>Abacus</i> .
<i>C</i> , <i>Ovolo</i> or Quarter-round.	<i>K</i> , <i>Ovolo</i> .
<i>D</i> , <i>Cavetto</i> with a Fillet.	<i>L</i> , Frize of the Capital.
<i>E</i> , Frize.	<i>M</i> , Aftagal.
<i>F</i> , Liftel.	<i>N</i> , Column.
<i>G</i> , Upper <i>Fascia</i> .	<i>O</i> , Platform of the Cornice.

The TUSCAN Cornice at large.

PLATE V.

IN this and all other Cornices, the larger divisions are parts of the whole Entablature. The manner of drawing it is this: Draw the upright line from which it is to project, mark the height of the Cornice, and divide it into three equal parts, which will give the large divisions; then compare the greater with the lesser parts. The uppermost division contains

contains the *Cima Recta* with its Fillet, which is $\frac{1}{2}$ of that part. The *Corona* has a Lift of a sixth part of the middle division: The lowermost division contains two members of equal bigness, viz. the *Cavetto* and the *Ovolo*; the *Cavetto* has a Lift of $\frac{1}{2}$ of its height, and the Lift over the *Ovolo*, which makes the Drip under the *Corona*, is of the same bigness. The projection of the Cornice, being equal to its height, is divided into three principal parts, and subdivided according to the projection of the members, as appears by the divisions upon the Line under the Cornice.

The Capital of the TUSCAN and DORICK Orders.

PLATE VI.

THE *Tuscan* Capital is half a Diameter in height; its projection is $\frac{1}{2}$ of the Diameter of the Column at the smallest part. Divide the height of the Capital into three parts; give one to the *Collarino* A, one to the *Ovolo* B, and the third to the *Abacus* C. The greater Divisions are subdivided into lesser according to their members. Divide the projection of the Capital into six parts, and make the *Ovolo* less than the Quadrant of a Circle. To find its Center mark the intersections from the extreme parts of the *Ovolo*, join them as marked by the prick'd line, and where this line intersects the upper line of the *Ovolo*, that will be the Center. The Astragal D, under the Capital, is a member belonging to the Column, and its measure is $\frac{1}{2}$ of the Semidiameter of it; and its height being divided into three equal parts, $\frac{1}{2}$ goes to the Lifsel. It projects as much as it is in height. The method for joining the Lifsel to the Column is this; divide the projecting part of the Lifsel into five parts, and take six such parts for the Semidiameter of the *Cavetto*.

The Profile of the *Dorick* Capital being much the same with that of the *Tuscan* (except that the divisions are more both in its members and projection) the foregoing Rule will be sufficient to explain it.

The DORICK Pedestal with part of the Column and its Base.

P L A T E VII.

THE *Dorick* Base is in height a Semidiameter of its Column, and its projection is $\frac{1}{3}$ of the Semidiameter; and that gives the breadth of the Die of the Pedestal. The height of the Pedestal was mentioned before in Plate I. N^o. 2. The projection of the Base and Cap is the same as in the *Tuscan*, Plate III. For their particular members see Plate XXIV, and for the Base of the Column see Plate XXV. The Flutings are twenty-four as they are marked on the Column.

The Names of the members of the Base of the Column are as follows:

<i>A</i> , The upper <i>Torus</i> .	<i>C</i> , Under <i>Torus</i> .
<i>B</i> , <i>Scotia</i> or <i>Cavetto</i> .	<i>D</i> , Plinth.

The DORICK Entablature.

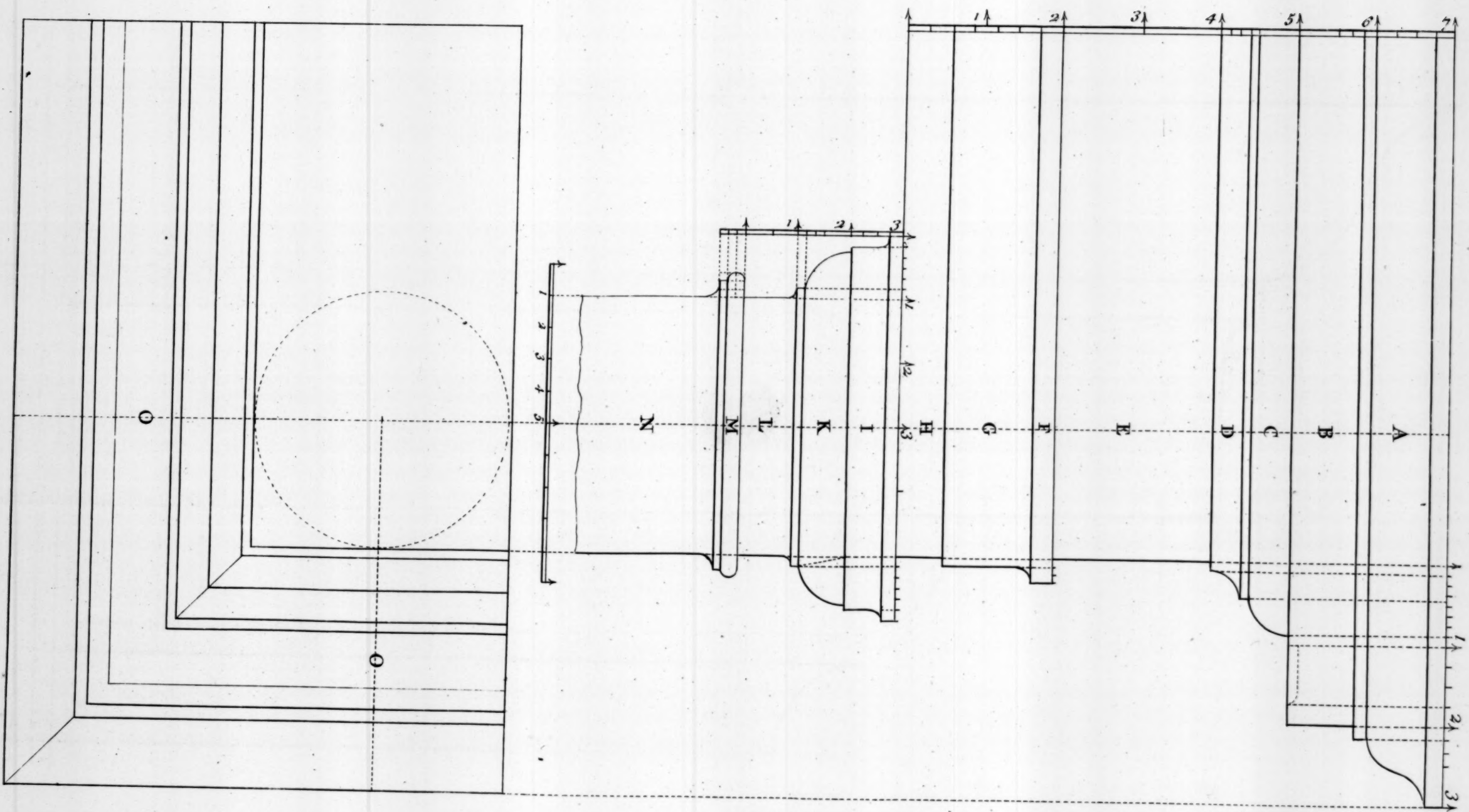
P L A T E VIII.

THE height of the *Dorick* Entablature (which is two Diameters or a fourth part of the height of the Column) being divided into eight parts, two go to the Architrave, three to the Frize, and three to the Cornice. The Cornice projects a whole Diameter or four of those parts, or one half of the height of the whole Entablature, as is marked above the Cornice; but to make the Cornice and Frize better understood, I have drawn them larger on the next Plate. For the Architrave see Plate XXVI, and for the Capital, Plate VI.

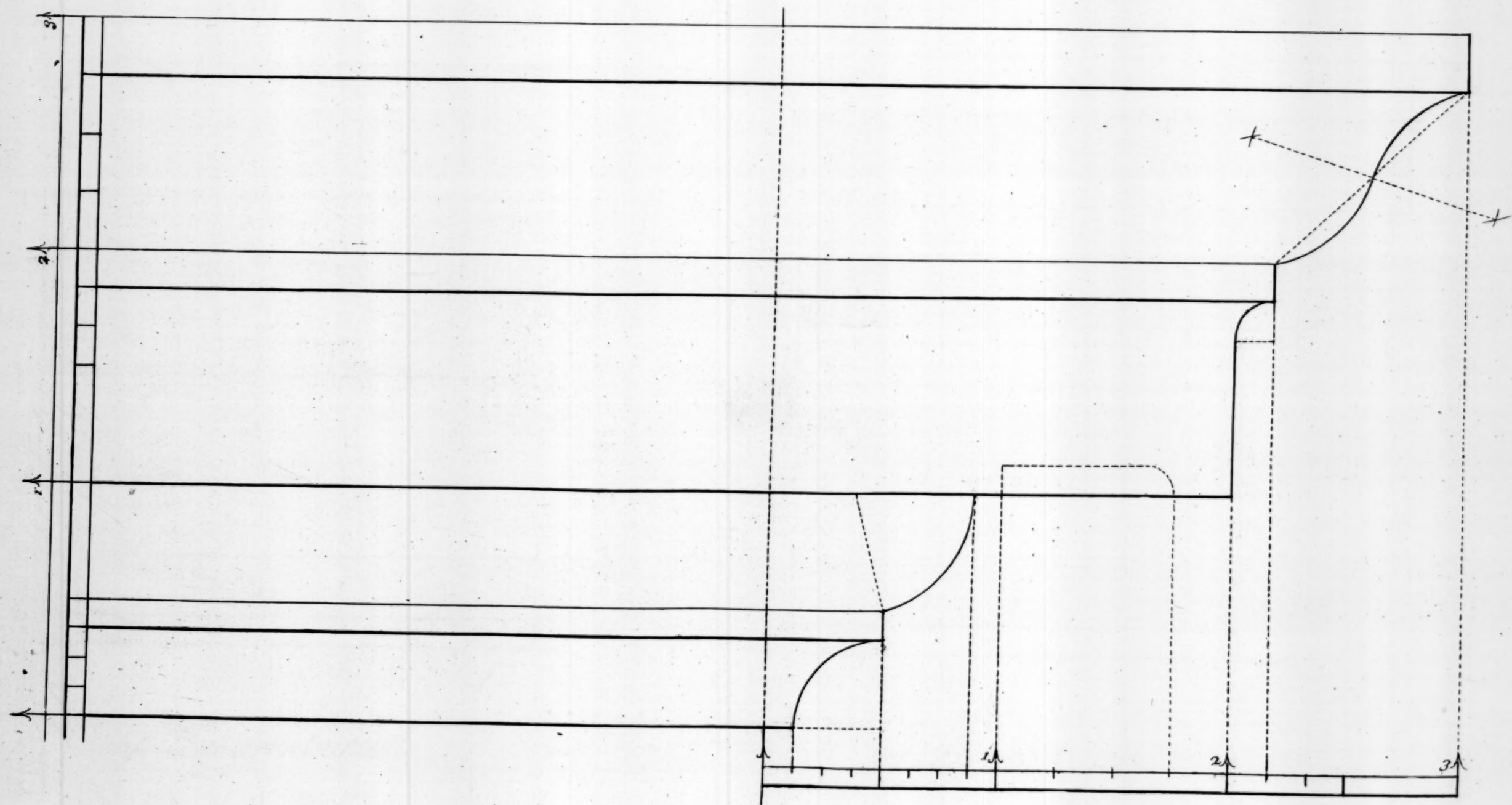
The Names of the Members of the *Dorick* Entablature.

<i>A</i> , <i>Cima recta</i> with a Lift over it.	<i>F</i> , Capital of the Triglyph.
<i>B</i> , Lift.	<i>G</i> , Triglyph.
<i>C</i> , <i>Corona</i> .	<i>H</i> , Flutings of the Triglyph.
<i>D</i> , Mutille, with an Oggee over it.	<i>I</i> , Profile of the Triglyph.
<i>E</i> , <i>Oculo</i> with its Fillet.	<i>K</i> , Metop.

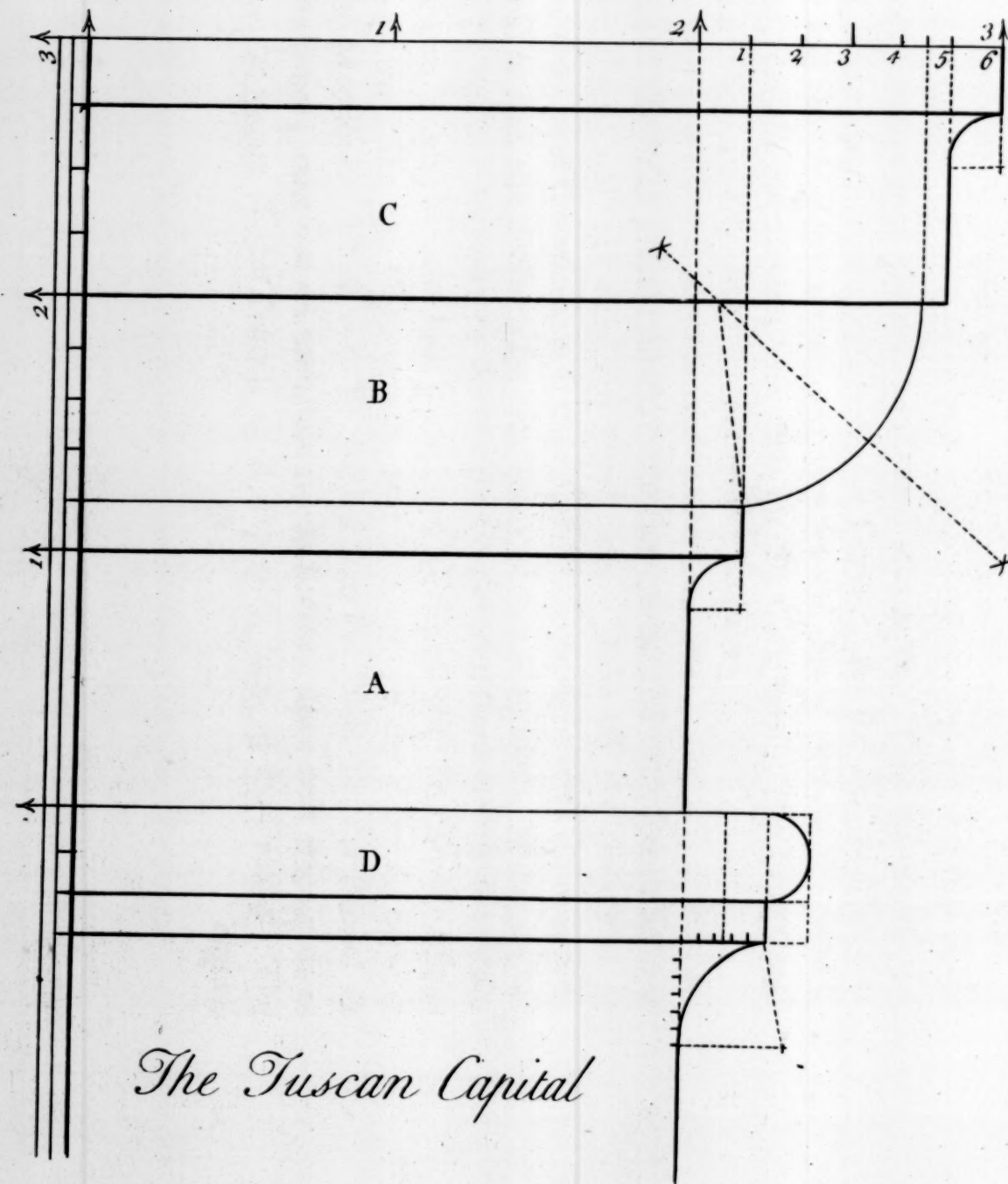
L, An



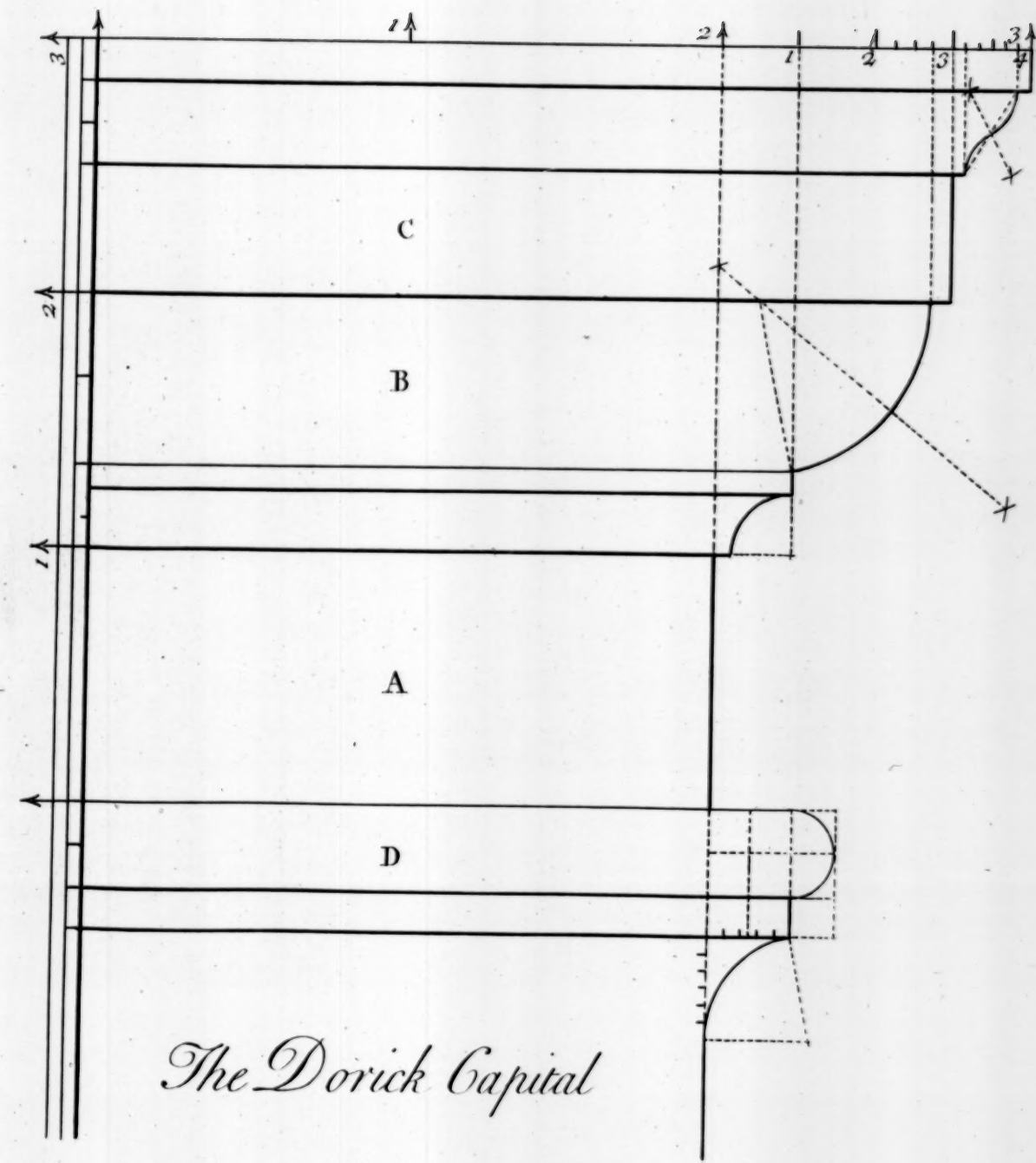








The Tuscan Capital



The Dorick Capital

1870

1871

2



<i>L</i> , An Ornament in the Metop.	<i>R</i> , <i>Ovolo</i> or Quarter-round.
<i>M</i> , <i>Tenia</i> or Bandage.	<i>S</i> , <i>Cavetto</i> .
<i>N</i> , <i>Gutta</i> or Drops.	<i>T</i> , Frize of the Capital.
<i>O</i> , <i>Fascia</i> of the Architrave.	<i>U</i> , <i>Astragal</i> .
<i>P</i> , <i>Cimaşum</i> .	<i>V</i> , The ſmalleſt part of the Column.
<i>Q</i> , <i>Abacus</i> .	<i>W</i> , The Platform of the Cornice.

The Cornice and Frize of the DORICK Order.

P L A T E IX.

THE Frize and Cornice are here expreſſed at large; the *fiſt* ſhewing its Triglyphs and Metops, and the Cornice its Mutils and Modillions. The prick'd line *AB* is the middle of the Column, and the line *CD* answers to the diminiſhed part of the Column. The Metops of the Frize muſt be ſquare, their breadth being equal to their height, and they are $\frac{1}{2}$ of a Diameter. The Triglyphs are half a Diameter. Divide half the Triglyph into fix parts; one is half a Flute, and the Space betwixt the Flutes is $\frac{1}{2}$. The Profile or thickneſs of the Triglyph *G* is $\frac{2}{3}$; divide that thickneſs into three parts, two will be the depth of each Flute. The Drops or Bells muſt be fix; their form is triangular.

The Cornice is in height $\frac{1}{2}$ of a Diameter, and is divided into three parts; and each of them is ſubdivided into three. Take off one of the ſubdivided parts at the bottom of the Cornice, for the flat member that crowns the Triglyphs; then give two for the *Ovolo*, two for the Modillion, two for the *Corona*, and two for the *Cimaşum*. The Fillets and ſmall Ogee are explained by the ſmaller diviſions.

The projection of the Cornice is one Diameter. There is at the bottom of the Frize a Scale divided into four parts, and each fourth divided into three, and each third into three more. Take off the projection of the *Ovolo* and *Cimaşum*, as is expreſſed by the upright prick'd lines; proceed to find the diviſions for the heads of the Modillions, which are all to be equal. In order to this divide the diſtance from middle to middle of two Triglyphs into four parts; two of them will be the Modillion with the Fillet and Ogee over it, and two will be the diſtance betwixt the Modillions, which is to be divided into five parts for the Pannel in the Soſite; take one on each ſide for its Border, there will remain three for the ſquare of the Pannel, as is expreſſed here in the Profile. The

D

bignels

bigness and projection of the Modillion being known, form the Platform or Soffite of it in this manner, as at *F*. Draw the two Diagonal lines from the corners *a* and *b*, intersecting one another at right angles in the middle of the inner square at *C*. The distance of the Diagonal lines falling on the joining part of the Modillion at *d, d*, will give the side of the inner square, and the remainder will be the border *e, e, e*, on the three sides. Divide the sides of the square into six parts, and draw parallel lines from each division; then describe the Circular drops, leaving a small space of $\frac{1}{2}$ betwixt them. A double square of two must be left plain in the middle, and the space betwixt the Drops must be sunk to half a Diameter of one of the Drops.

The IONICK Pedestal with part of the Column and its Base.

PLATE X.

THE general divisions of the *Ionick* Pedestal are the same as in the foregoing Orders. For the particular parts, see Plate XXIV for the Base and Cap of the Pedestal, and Plate XXV for the Base of the Column.

<i>A</i> , The Lift.	<i>F</i> , <i>Cima</i> of the Pedestal.
<i>B</i> , Upper <i>Torus</i> .	<i>G</i> , <i>Dado</i> , or Dic.
<i>C</i> , <i>Scotia</i> .	<i>H</i> , Base.
<i>D</i> , Lower <i>Torus</i> .	<i>I</i> , Plinth of the Base.
<i>E</i> , Plinth.	

The IONICK Entablature.

PLATE XI.

THE height of the *Ionick* Entablature, being $\frac{2}{3}$ of the height of the Column, is divided into ten parts; three of them go to the height of the Architrave, three to the Frize, and four to the Cornice. The projection of the Cornice, being equal to its height, is likewise divided into four parts. For the particular members see the next Plate, where it is drawn larger, and Plate XXVI for the Architrave.

A, *Cima*

<i>A, Cima recta.</i>	<i>F, Frize.</i>
<i>B, Corona.</i>	<i>G, Liff.</i>
<i>C, Modillion.</i>	<i>H, Reversed Cima.</i>
<i>D, Ovolo.</i>	<i>I, Upper Fascia.</i>
<i>E, Cavetto.</i>	<i>K, Lower Fascia.</i>

The Ionic Modillion-Cornice.

PLATE XII.

THERE are two *Ionic* Cornices, one with Modillions, and the other with Dentels; they have both the same general proportions, but differ in their particular members. The *Ionic* Modillion-Cornice is divided into four principal parts; and those parts are subdivided for its smaller members. The projection of the Cornice is equal to its height; the members are confined by pricked lines coming from the Scale at the bottom of the Cornice, which is divided into four parts and subdivided. This Cornice, when used over Columns, must have its Modillions $\frac{2}{3}$ of the Diameter of the Column, and the space betwixt them $\frac{1}{2}$. Half a Diameter betwixt middle and middle of the Modillions is here divided into six parts; of which one is half a Modillion, and four the space betwixt them, and the length of the Modillion three. The pricked line *AB*, which is the middle of the Column, must go through the middle of the Modillion; and the line *CD* shews the diminished part of the Column, which toucheth the side of a Modillion. The shape or form of it is made from three Centers: The length of it being first divided into six parts, erect a perpendicular at 4, and another at 1; the first Center will be at 4, the second one and a half below it, and the third two and a half above it, according to the two Quadrants on the Modillion. The projection of a reversed Ogee and Fillet over it, being the Cap of the Modillion, is shewn by a prick'd square at the end of the Modillion. As to the square Pannels in the Soffit of the Cornice, divide the space betwixt the Caps of the Modillions into six parts, as is figured; take one on each side for the Border, there remain four for the Pannel. Mark the same divisions on the Profile of the *Corona* at *E*, and divide the remaining part in two for the Drip. But where the Cornice is used without Columns, the bigness of the Modillion in proportion to the Cornice is given on the Scale below the Cornice.

The

The IONICK Dentel-Cornice.

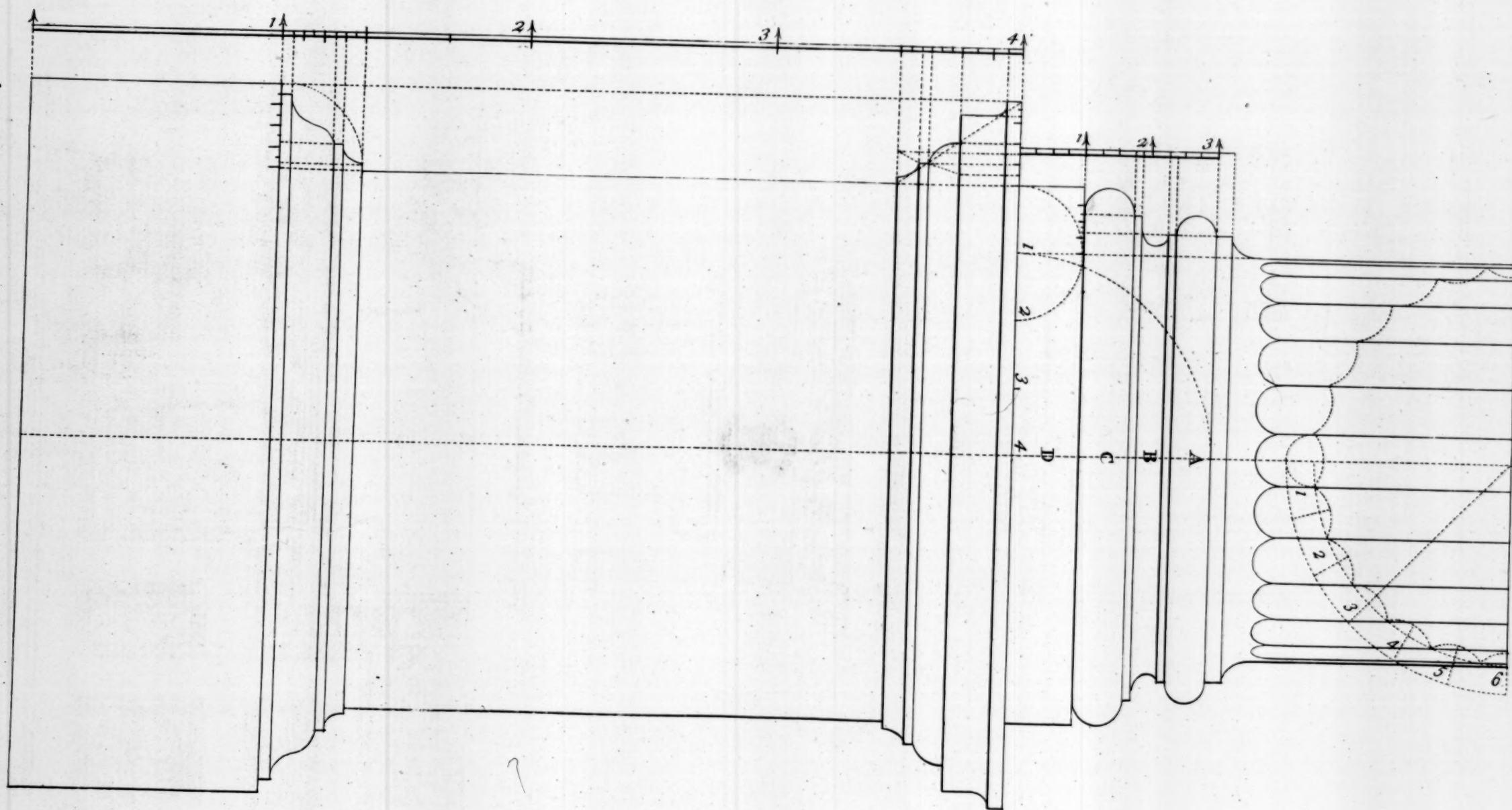
P L A T E XIII.

THE height of the *Ionick* Dentel-Cornice is divided into four parts as the former, and is very easy in its divisions. When this Cornice is used upon Pillars or Piafsters, the Dentels must be exactly divided by the Diameter of the Column. Supposing the line *AB* to be the middle line of the Column, from hence is set down half a Diameter divided into twelve equal parts, as marked on the Dentels, of which one is half a Dentel, and one the space betwixt them: The upright line *CD* answers to the diminished part of the Column, from whence the Cornice doth project, as directed by a Scale below the Cornice. But in case the Cornice is used by itself for Rooms, Doors, Windows, &c. to find the bigness of the Dentel, you must divide $\frac{1}{2}$ of the Scale of the projection of the Cornice into six parts: Then take the length of seven such parts, and divide it into five parts; two of them will be the Dentel, and one the space betwixt them, as you may observe by the Scale *CC*.

The IONICK Capital.

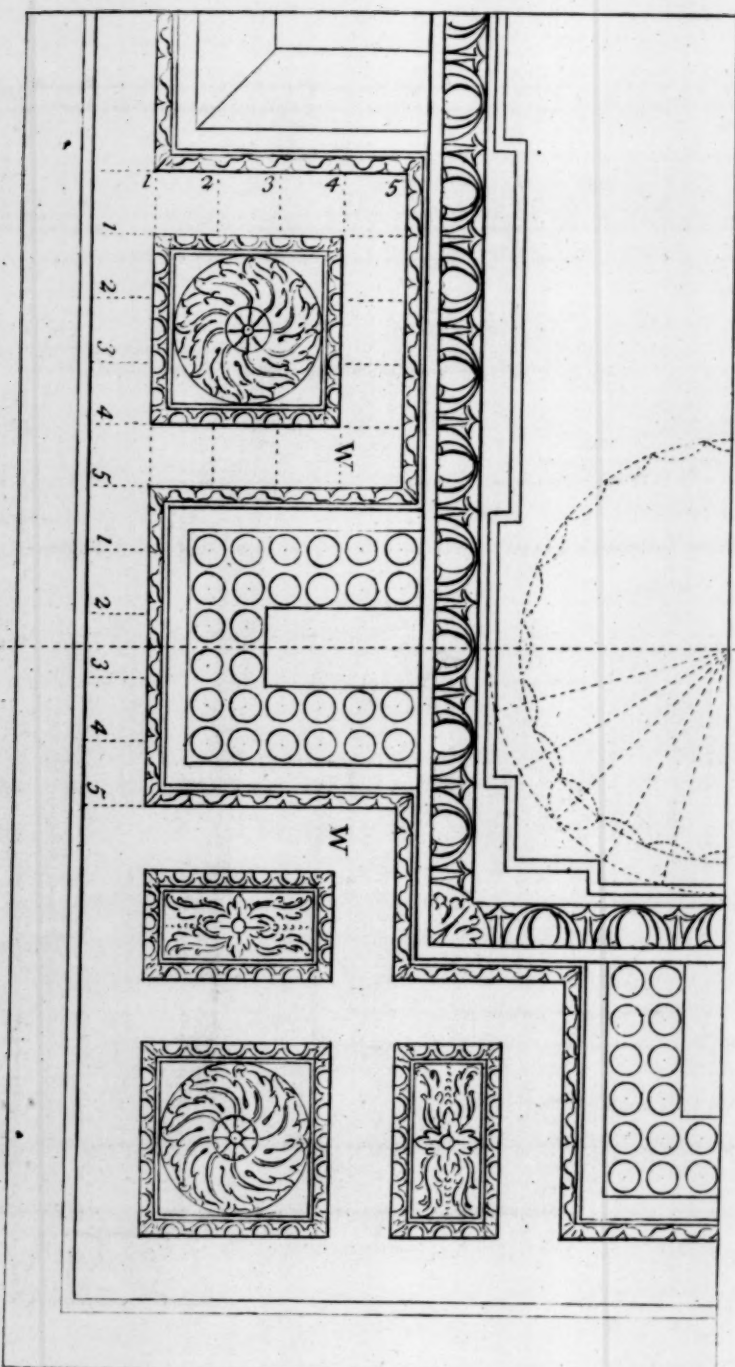
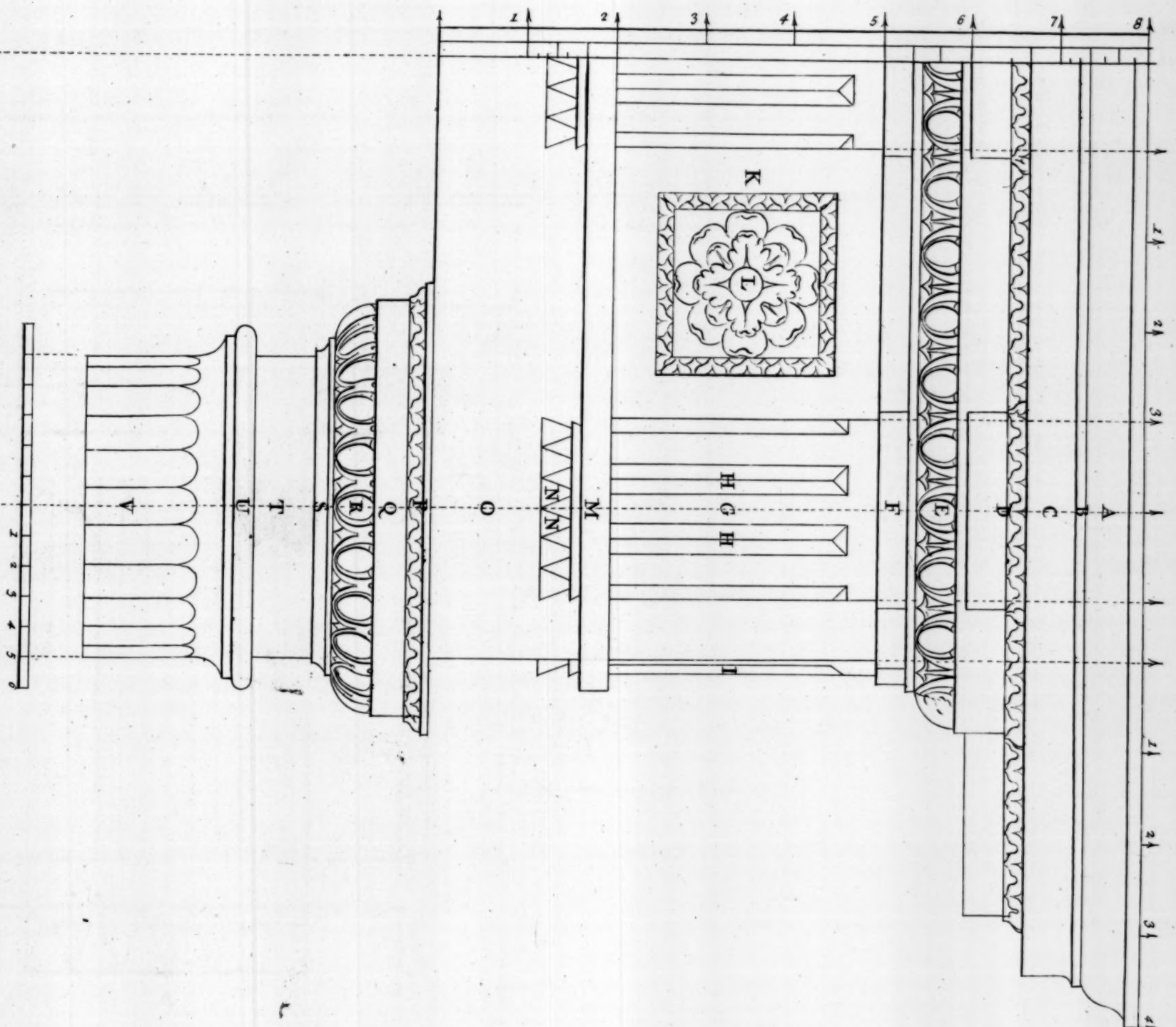
P L A T E XIV.

THIS Plate contains three Figures; N^o. 1. the upright face of the Capital, N^o. 2. the Plan of the round and square Column with the projection of the Capital, and N^o. 3. the Volute seen in front and angular-wise, drawn larger than above. Between N^o. 1. and N^o. 2. there is a Scale of one Diameter, half of which is divided into six parts; to which there are added three parts on each side, for the projection of the Capital. Draw a line for the middle of the Capital, and another cross-wise for the upper part of it; give half a Diameter for its height *AB*: Divide it into three parts, as marked on the left hand above; take $\frac{1}{3}$ for the *Abacus*, which you are to divide into two parts, and the upper half into four, of which you must give three to the *Ovolo*, and one to the Lift of the *Abacus*. Then divide the height *BC* into eight parts, two of them give the *Ovolo* *H*, one the Bead *I*, which answers to the Eye of the Volute, and half one of those parts gives the Lift *K*. This being done, form

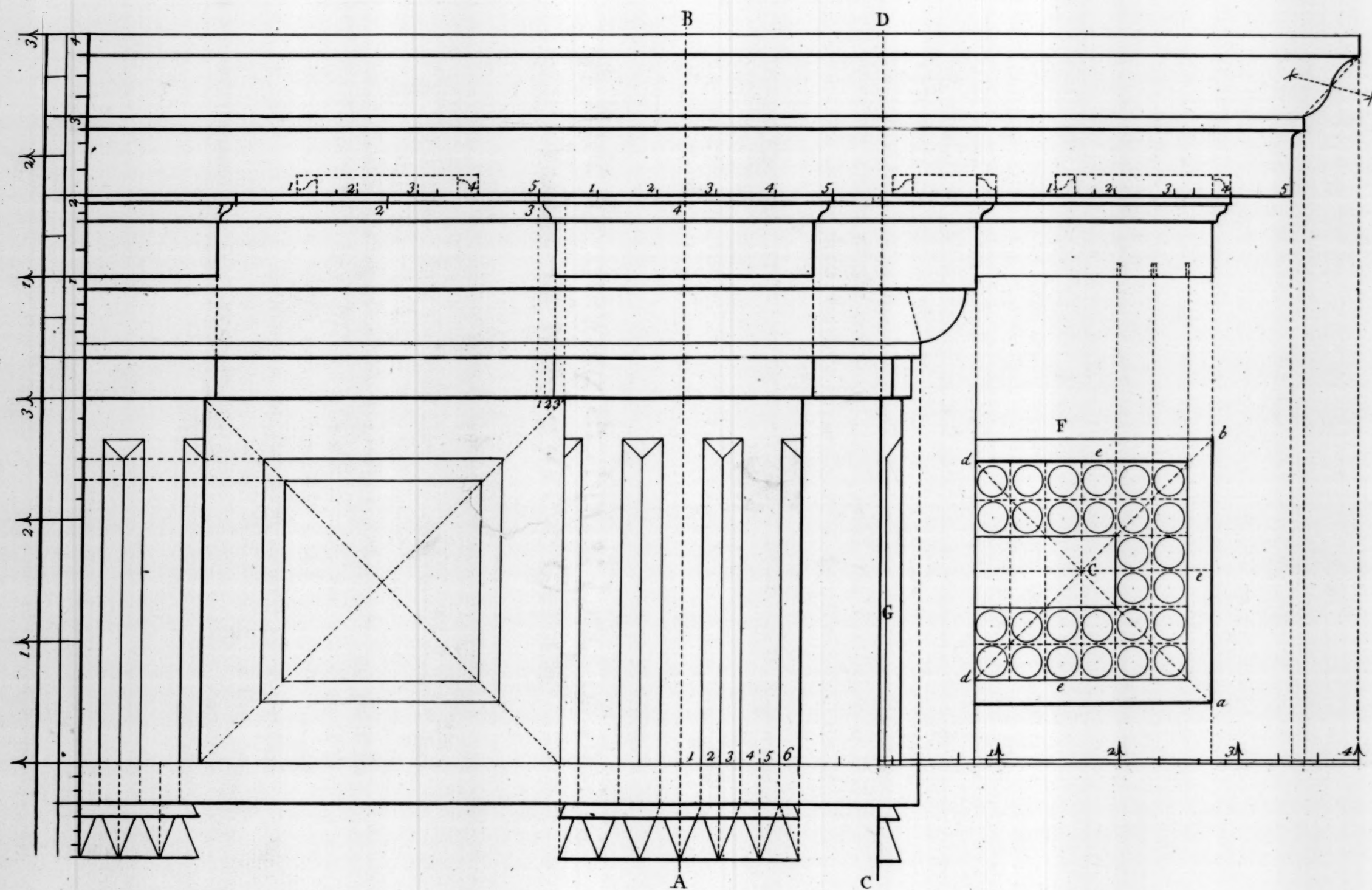


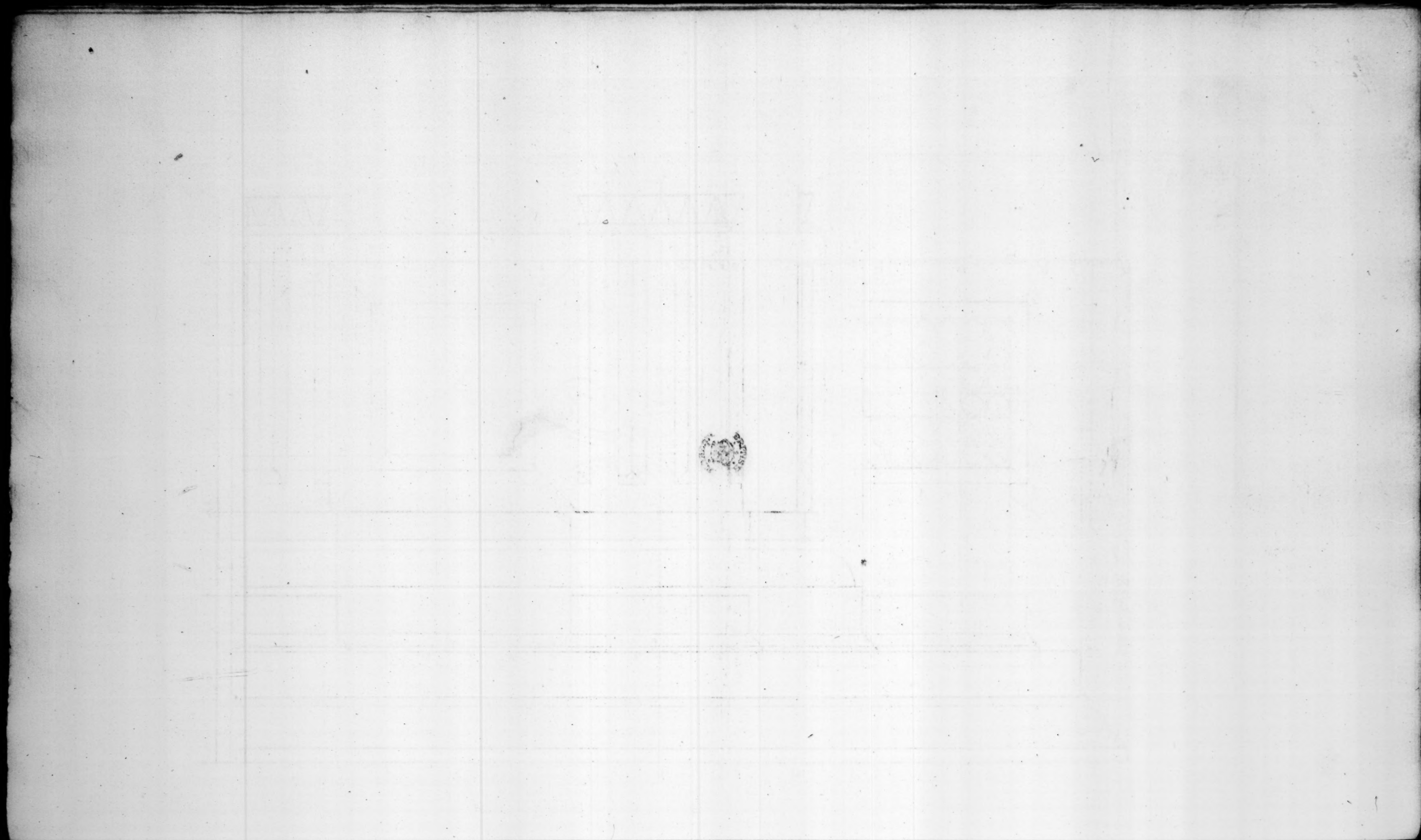


III A.









form the Volute from its several Centers, as in the example N^o. 3. And as the height of the Volute is divided into eight parts, the breadth of it must be seven of them: But to make it more plain, I have drawn it larger on the next Plate.

To draw the Plan N^o. 2. take five parts of the Diameter for the solid or diminished part of the Column, which is shaded on the Plan. From the Profile of the upright face of the Capital draw the projection of the *Ovolo*, Bead and Lift, and mark them in the Plan. The Flutings are 24; to form which, divide a quarter of the Plan of the Column into six parts, which shall give the Center for each Flute. Then divide half a sixth into four parts; take three parts for half the Diameter of the Flutes, and draw them Semicircular, the spaces betwixt the Flutes will be $\frac{1}{3}$ of a Flute; the Eggs and Darts are of the same number, and answer the same divisions. The Flutes of Pilasters or square Columns must be the same as in round Columns, which will make seven in number, divided from the middle; at the corner of each Pilaster there remains $\frac{1}{3}$ for a Bead. Then form a square at the extremity of the projection of the Capital, take off at each corner diagonally $\frac{1}{4}$ of half the Diameter of the Column, from the corner of the remaining length mark the intersection at *D*, from this Center draw the Segment or Cavity of the *Abacus* *EE*, set off corner-wise $\frac{1}{4}$ for the two incumbers of the *Abacus* *FF*, divide it into two parts and give one to the narrowest part of the *Abacus* *GG*, join the inner and outer corner by a line, and return the members of the Cavity. The greatest projection of the Volute *L* falls plumb with the lower part of the *Abacus* *G*, as is shewn in N^o. 3.

A Rule for drawing the Spiral Lines of the Volute of the IONICK Capital.

PLATE XV.

THE Rule to draw the Spiral lines, which form the *Ionick* Volute, is this: Take the height *AB*, and divide it into eight parts, the fourth shall be the bigness of the Eye, which divide into two parts for the Center; then draw *AC* in a rectangle to *AB*, and mark on it seven of the divisions of the upright line *AB*, which gives the breadth of the Volute; the upright line on the third division gives the Center of the Eye: Then draw the outer square that contains the Eye, and the Diagonal lines through the Center of it; parallel to those Diagonals,
E
describe

Describe the inner square, in which observe the cross lines from side to side divided into six parts for the Centers, as is expressed larger in the lower Figure, where the Centers are marked 1, 2, 3. From these Centers draw lines parallel to the sides of the outer square, extended on each side; fix one point of your Compasses in the first Center 1, and extend the other upwards to 1, and draw the biggest Quadrant from 1 to 2; change your Compasses to the Center 2, and with the length 2, 2, describe the next Quadrant from 2 to 3; and so on to the number of Centers, until the Spiral line touch the upper part of the Eye. The inner Spiral runs parallel to the outer from *aa* to Center 3, and the breadth of the Fillet formed by them is half one of the divisions of the upright Scale. The second Spiral is marked with letters *a b c d*, &c. as also the Centers belonging to it; all which will be plain if followed in the same manner as before.

The CORINTHIAN Pedestal with part of the Column.

PLATE XVI.

THE *Corinthian* Pedestal is the same, as to its general proportions and parts, as the Pedestal of the foregoing Orders. For the Base and Cap of it see Plate XXIV, and for the Base of the Column, Plate XXV. The Flutings of the Column are twenty in number, and are of a Semicircular form.

The CORINTHIAN Entablature.

PLATE XVII.

THE height of the *Corinthian* Entablature is divided into ten parts; whereof the Architrave hath three, the Frize three, and the Cornice four. The projection of the Cornice, being equal to its height, is divided into four parts: The smaller divisions are expressed at large on the next Plate. For the Architrave see Plate XXVI. The Drawings below shew the Platform of the Cornice with its Modillions and Rosets.

The CORINTHIAN Cornice at large.

P L A T E XVIII.

THE *Corinthian* Cornice is of a more rich composition, and hath a greater variety of members than the former. The first upright Scale contains four parts of the ten into which the whole Entablature is divided, as on Plate XVII. The second Scale is divided into five parts, the third of which goes to the Modillion, the fourth to the *Corona*, the fifth to the *Cinastum*; the first and second together are divided into three parts, the first is for the reversed *Cima* at the bottom, the second for the Dentels, and the third for the *Oveola*. The smaller members are in proportion to the greater, as is explained by the lesser divisions on that Scale. The Modillions are $\frac{1}{4}$ of the Diameter of the Column, and their distances two sixths and a half. Half a Diameter is here divided on the Cornice into six parts, of which the breadth of the Modillion is two, and the length of it is four; the Cap projects $\frac{1}{2}$ of those parts, and the distance betwixt the Modillions is five. By this Rule the exact distance betwixt middle and middle of the Modillions is $\frac{1}{2}$ of the Diameter. The upright prick'd line *AB* is the middle of the Column, and *CD* answers to the diminished part of it, from whence the Cornice is projected; which projection is equal to its height, as is shewn by the Scale at the bottom of the Cornice; on which is likewise shewn the bigness of a Modillion, where one fourth of the Scale is divided into six parts, five of which make the breadth of the Modillion. The distance between them is in proportion to it, as figured in the Front and Profile of it. The Pannels in the Sofite are plain by the divisions marked on them. The Out-fillets of the Modillion marked *a, a*, are $\frac{1}{4}$ of its breadth; and so is the Bead *f*. But I have drawn the Modillion at large and explained it at the end of this Book, Plate LXIV. As to the Dentels, divide the Semidiameter marked on the Cornice into fourteen parts: two of those parts will be the Dentel, and one the space betwixt them.

The CORINTHIAN Capital.

PLATE XIX.

THERE are three Figures on this Plate. N^o. 1. is the upright of the Capital. N^o. 2. the Plan, being one quarter-part of a round and square Column; as also of the Capital with its Projections. N^o. 3. the Capital seen angular-wise and in profile, with its Stems and *Cauliculi*. The height of the Capital is one Diameter and $\frac{1}{2}$, including the *Abacus*. Divide the height of the Capital from the Astragal to the under-part of the *Abacus* into three parts, which give the height of the Leaves and *Cauliculi*; and each part being subdivided, as on the Scale upon the left hand of the Capital, will give the Foldings of the Leaves, which must not exceed in projection the oblique prick'd line drawn from the Astragal to the extremity of the *Abacus*.

The COMPOSITE Pedestal with part of the Column.

PLATE XX.

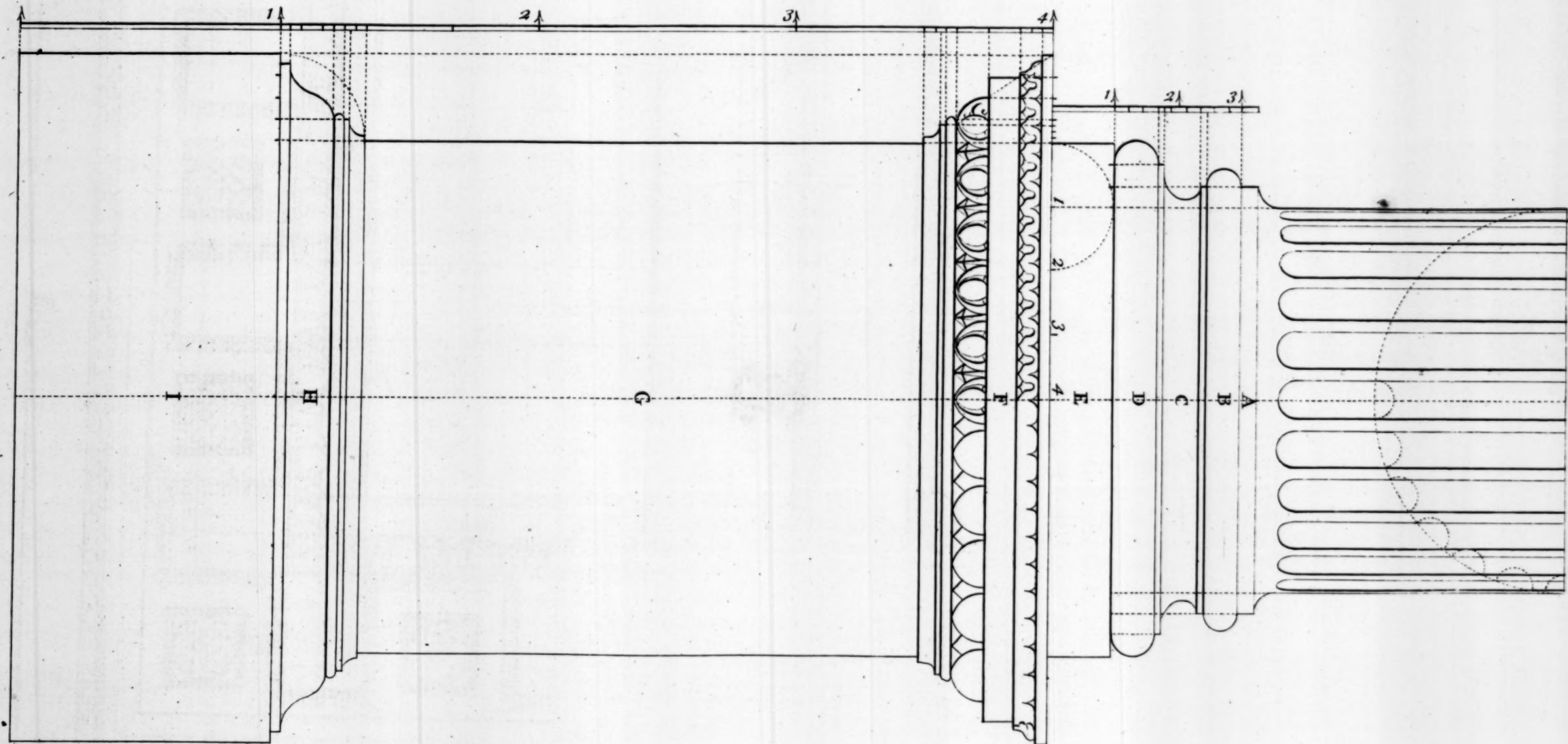
THE general proportions of the *Composite* Pedestal are the same as in the foregoing Orders. For the particular parts, see Plate XXIV for the Base and *Cima* of the Pedestal, and Plate XXV for the Base of the Column.

The COMPOSITE Entablature.

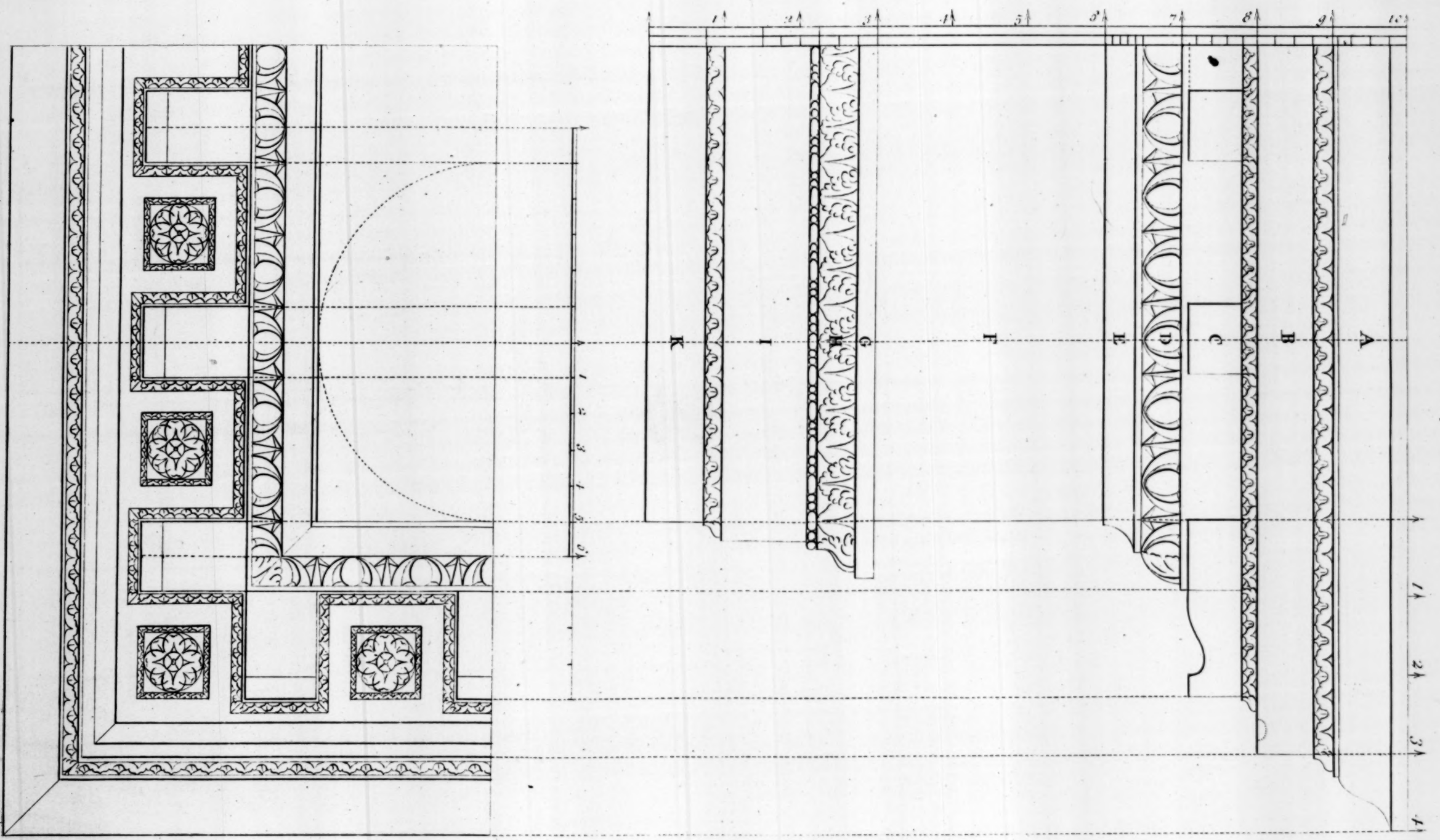
PLATE XXI.

THE height and projection of the *Composite* Entablature is the same with that of the *Corinthian*; only the Astragal under Oggee at the bottom of the Cornice is taken off the Frize. The Cornice is drawn by itself on the next Plate. For the Architrave see Plate XXVI.

The

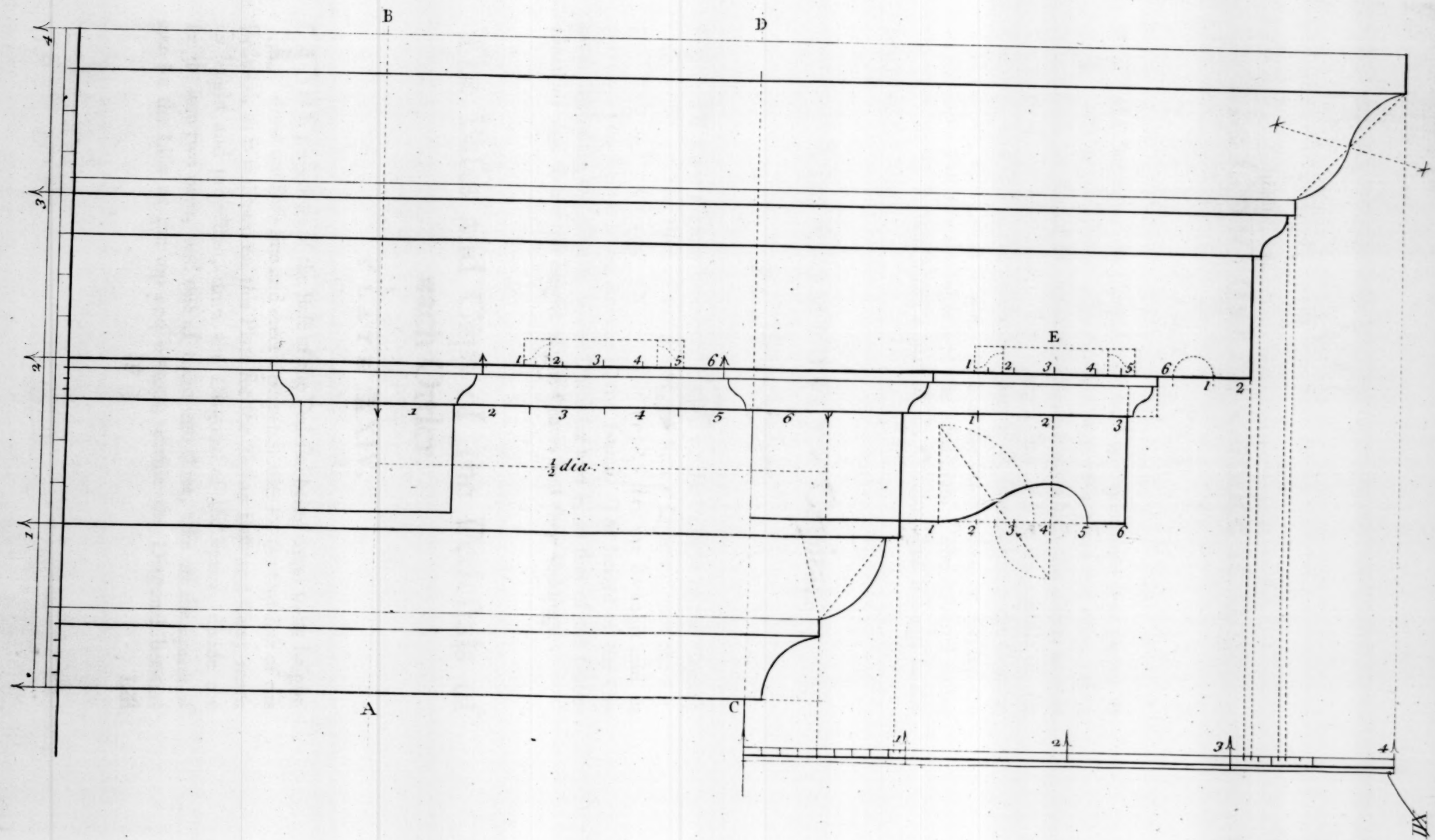


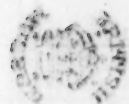




17







The Composite Cornice at large.

PLATE XXII.

THE height of the *Composite* Cornice is divided into four parts ; as also its projection. This Cornice is in itself plain and easy, being taken from the *Ionick* Modillion-Cornice ; from which this differs only in the form of the Modillion. The upright line *AB* is the middle of the Column, and *CD* is the diminished part of it, from whence the Cornice doth project, equal to its height. If $\frac{1}{4}$ of the Scale below be divided into six parts, five give the bigness of the Modillion. The Astragal under the Ogee at the bottom is not a part of the Cornice, but belongs to the height of the Frieze.

The Composite Capital.

PLATE XXIII.

THE three Figures here exhibit (N^o. 1.) the Upright of the Capital. (N^o. 2.) The Plan of the round and square Column, and the Capital with its Projections. (N^o. 3.) The Capital seen on its angle and in profile. The Volute is the same as in the *Ionick*. The height of the Capital, including the *Abacus*, is one Diameter and $\frac{1}{2}$, as that of the *Corinthian* is ; and so are the height of the Leaves and their Foldings.

The Bases and Caps of the Pedestals of each Order.

PLATE XXIV.

THE projection of the Base of the Pedestal being equal to its height, draw the Base-line and erect a perpendicular for the Out-line of the Pedestal, as it is drawn on this Plate for the *Tuscan* Base and Cap ; mark its height and projection, draw the Diagonal of the square, divide the height into two parts, and one of them into three, take off the square of one for the Lifts at the top and bottom, divide the Diagonal betwixt

F

Lift

Lift and Lift into two parts, and mark the Intersections from the middle and extreams of the Diagonal, as in the Plate; those Intersections are the Centers for drawing the Out-line of the Ogee. This is the Rule for all Curvilinear members of this kind, whether erect or reversed, as will appear in other examples. The Caps or Cornices of Pedestals are very easy in their divisions; and their projection is to their height as two to three, as appears by the upright Scales for their height and division of their members, and the Scales between the Caps and Bases for their projections.

Bases of the Columns of each Order.

PLATE XXV.

THE Bases are in height a Semidiameter of their Columns; their projection is $\frac{1}{2}$ of their height: Their members are of an easy form, being most of them Semicircular, except the *Scotia* which is mixt-linear, drawn from two Centers in this manner, as in the figure of the *Ionick* Base: Having divided and drawn the bigness of each member and the Centers of the upper and under *Torws*, let fall a perpendicular from the Center of the upper *Torws*, and divide it within the space of the *Scotia* into seven parts; the three uppermost will be the Semidiameter of the lesser Circle *CDE*: From the Center *C*, draw the outer Semicircle *AEB*, then draw the oblique line *AE* through the Center of the lesser Circle, *A* shall be the Center of the Segment *BE*; so that *BED* is the *Scotia* required. This Rule will serve for all the Bases of Columns. The upright and horizontal Scales shew the divisions of the members and their projections.

The Architraves of each Order.

PLATE XXVI.

IT is to be observed that the height of the Architraves of the *Tuscan* and *Dorick* Orders is divided into two parts, and then subdivided, as appears on this Plate; and that of the *Ionick*, *Corinthian* and *Composite*, is divided into three parts, and those subdivided, to form their members. The projection is taken from the line *AB*, which falls perpendicular

cular to the lower *Fascia*, and is in the first and second Order $\frac{1}{2}$, and in the three other Orders $\frac{1}{3}$ part of their height.

The Imposts of each Order.

PLATE XXVII.

THE letter *A* is the Impost, and *B* the Plan of the Pilaster contained in the square *abcd*; *ab*, marked on the Plan and in the Upright over the Impost, is the Architrave that goes round the Arch; *bc* is the inside of the Pilaster. The Imposts of Arches are in height $\frac{1}{3}$ of their Opening; which being divided into three parts, one of them is the height of the Neck or Frize of the Impost, the rest goes to the Capital. The Astragal at the foot of the Impost is $\frac{1}{3}$ of its height, and is divided into three parts, one goes to the List, and the other two to the Astragal. As to the projection of the Impost, in the *Tuscan* and *Doric*, divide the Architrave that goes round the Arch into three parts, one of them is the projection of the Impost: But in the *Ionick*, *Corinthian* and *Composite*, the Imposts project $\frac{1}{2}$ and $\frac{1}{3}$ more of one of these parts. The Profiles of the Architraves of the Arches of each Order are drawn under each Impost. For the divisions of the parts observe the upright and horizontal Scales.

Of Exotick Pedestals, and the Rule for drawing the Eggs and Darts.

PLATE XXVIII.

BY Exotick Pedestals I mean such as have their Mouldings otherwise formed and adorned than the Regular Pedestals that belong to each Order. And they are used generally for supporting Figures or Vases in Gardens, &c. Not but that those Ornaments may be supported by Regular Pedestals; but not being confined to such, they are made generally different from them. I have given here two sorts of them with their measures; and if the divisions on the Scales be observed, they will not be found difficult.

As to the Ornament of Eggs and Darts cut in the *Ovolo*, much used by the Ancients, if they are well proportioned they have a good effect.

The

The Rule for drawing them is this: Divide the height of the *Oculo* or Quarter-round into nine parts, seven of them, marked on each side of the middle line of the Egg, give the middle of the Darts; the small crosses on the right hand shew the Centers of the circular lines, and the prick'd lines coming from the Centers shew the joining of those lines that form the Egg and Shell. The Dart itself is formed by the prick'd lines which intersect each other; the one coming from the top of the middle line of the Egg, and the other from the upper part of the other Dart. I have given here several sorts of Eggs without Darts for a variety.

The Intercolumnations of each Order.

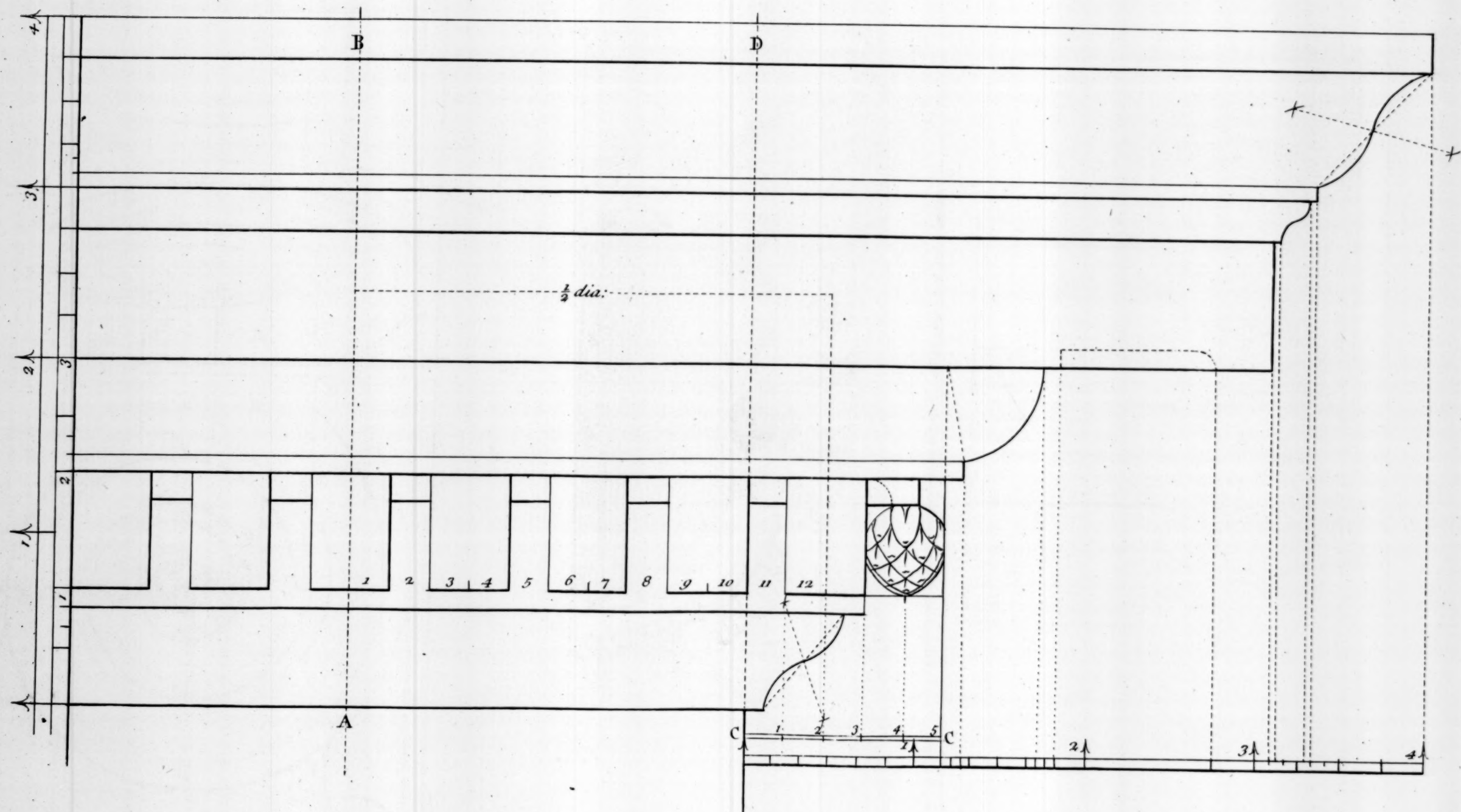
P L A T E XXIX.

THE placing of Columns at convenient distances asunder is called Intercolumnations, and are used in Galleries or Corridores, either for Beauty or Use, or both, or for Communication from one place to another, for Porticoes, *Peristyliums* or Colonnades, &c. The Columns may be more or less distant from each other according to the different Orders; but will be most agreeable when they are in proportion to their height. I have given on this Plate three different examples of each Order, and their distances figured. The narrowest is for double Columns, or Columns placed two and two.

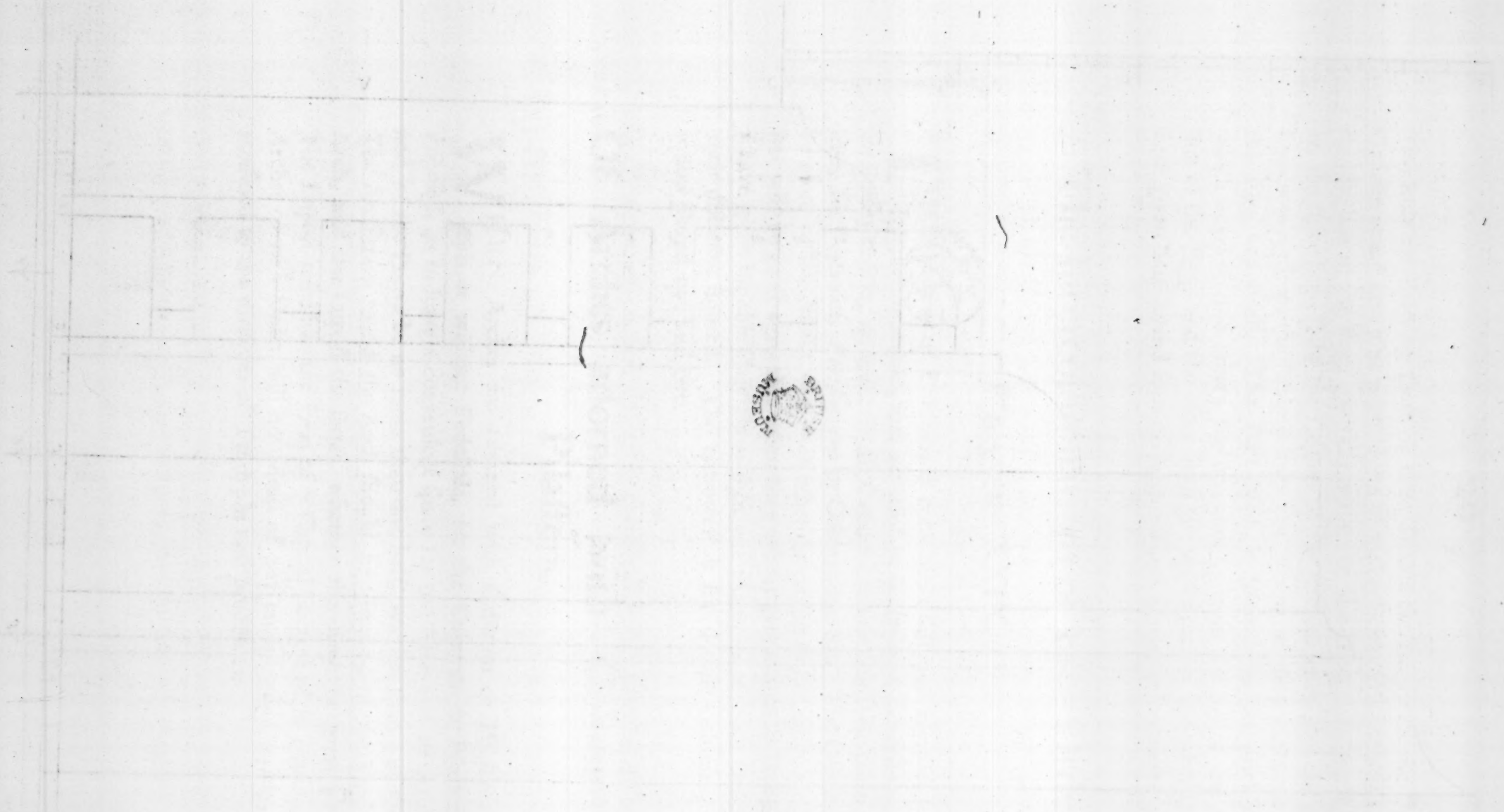
Of Arches adorned with Columns or Pilasters.

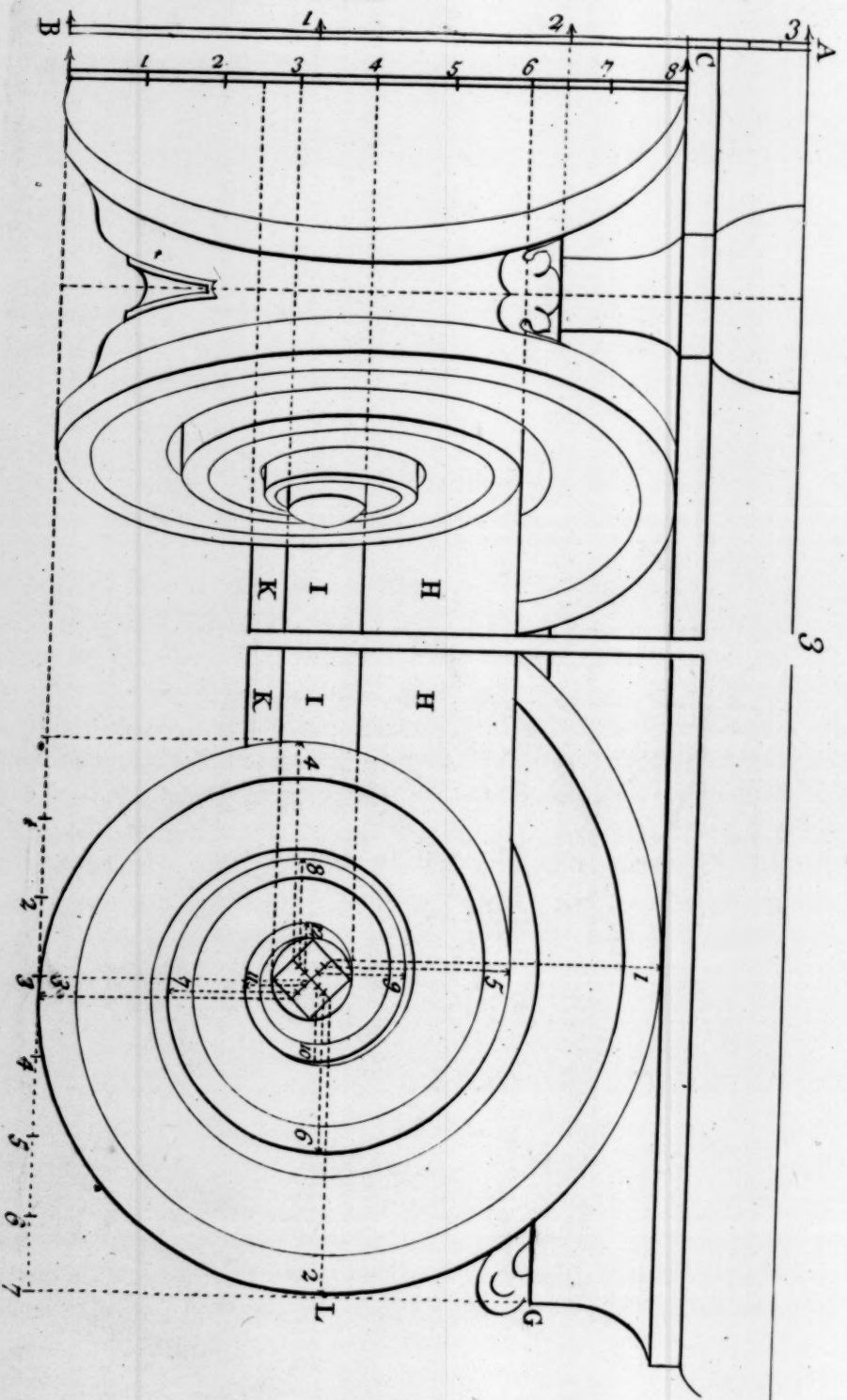
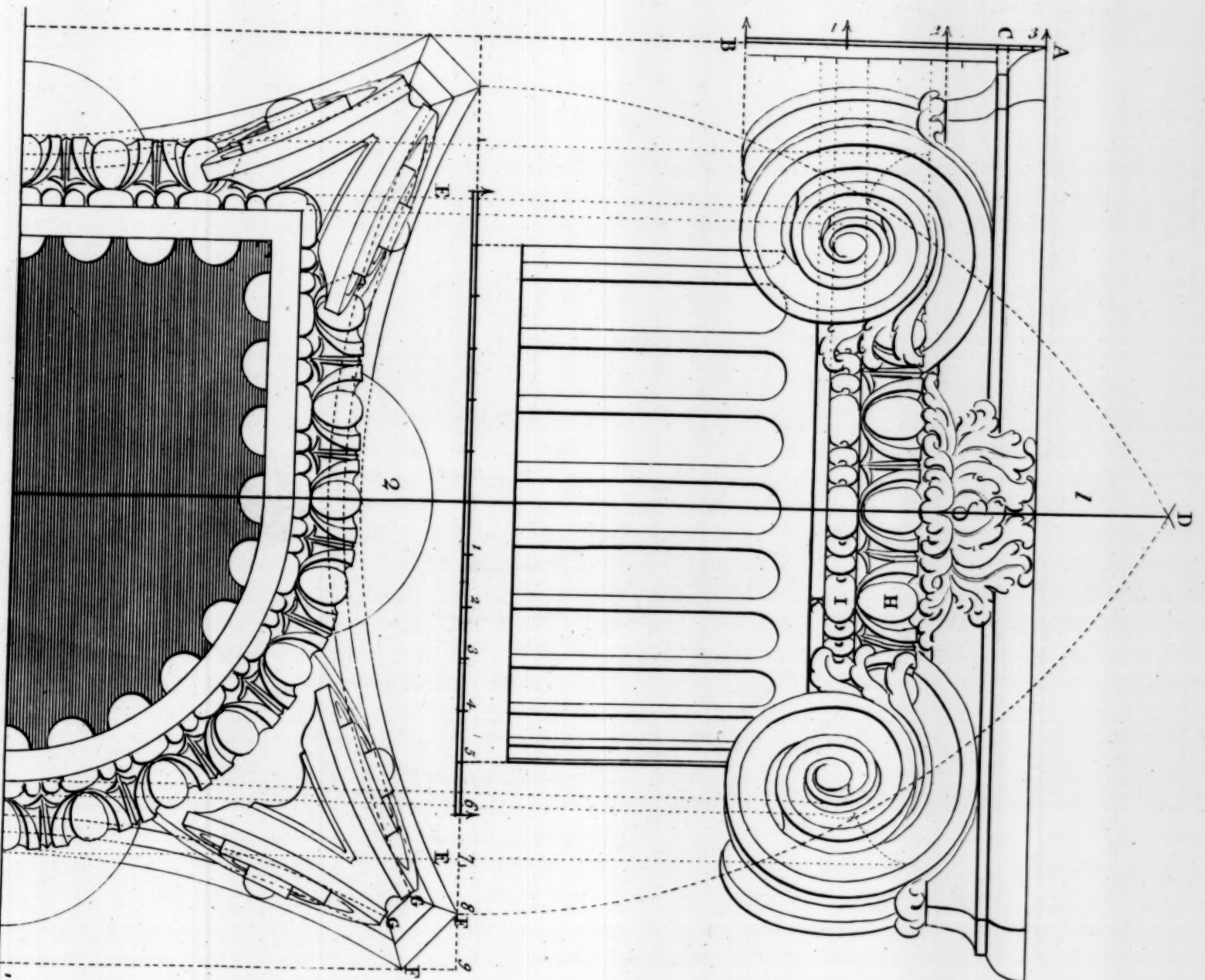
WHEN Arches are adorned with Columns or Pilasters, either with or without Pedestals, let the Columns or Pilasters be so disposed, as to leave a convenient space for the Arch and its Architrave, and let the Peeres be no more than one half, nor less than $\frac{1}{3}$ of the Void. The Architrave round the Arch should be always $\frac{1}{3}$ of the Void of the Arch, and the Impost the same, whether the Arch be great or small. The Impost resembles the form of a Capital because of its bearing. The Arches of each Order will not admit of any considerable variety, being confined to the divisions of Trigllyphs and Modillions.

The

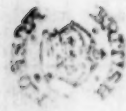


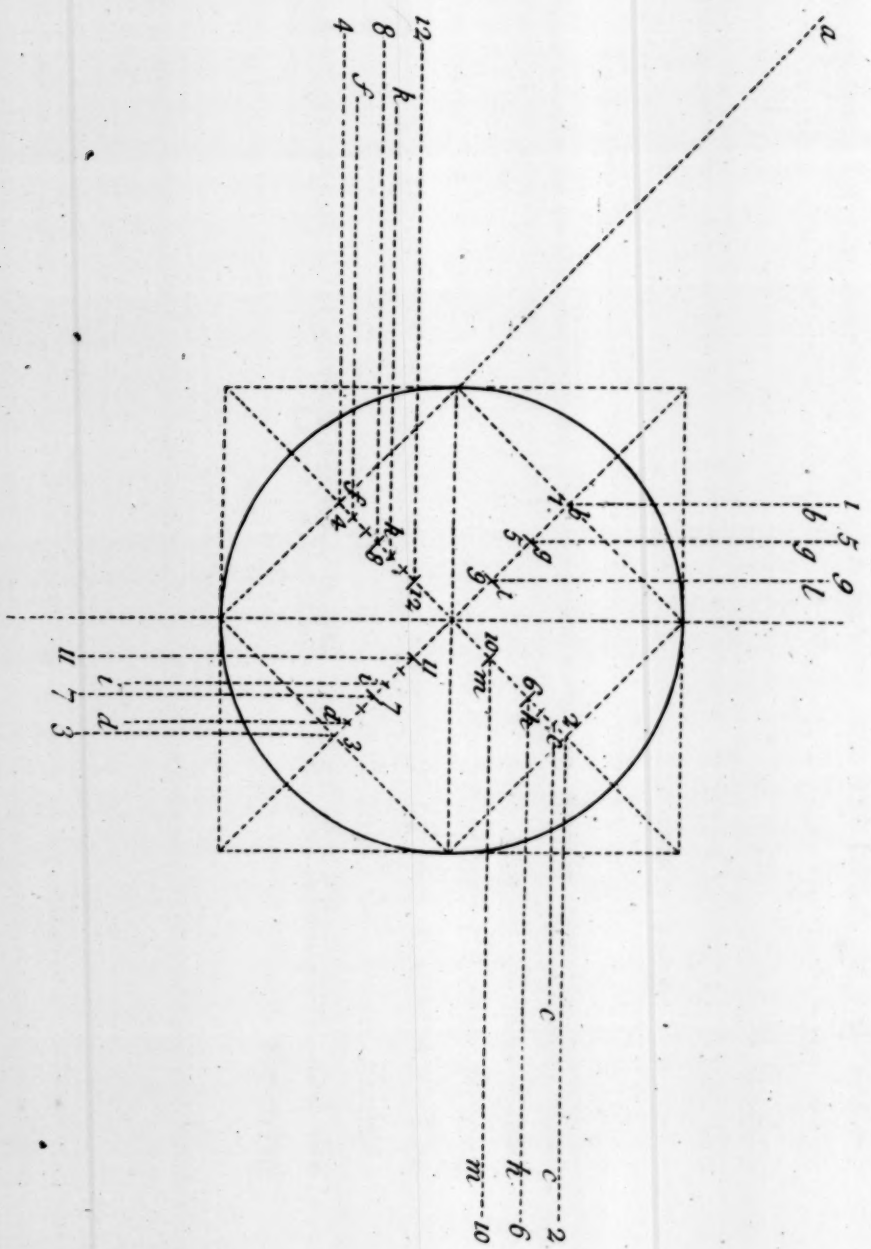
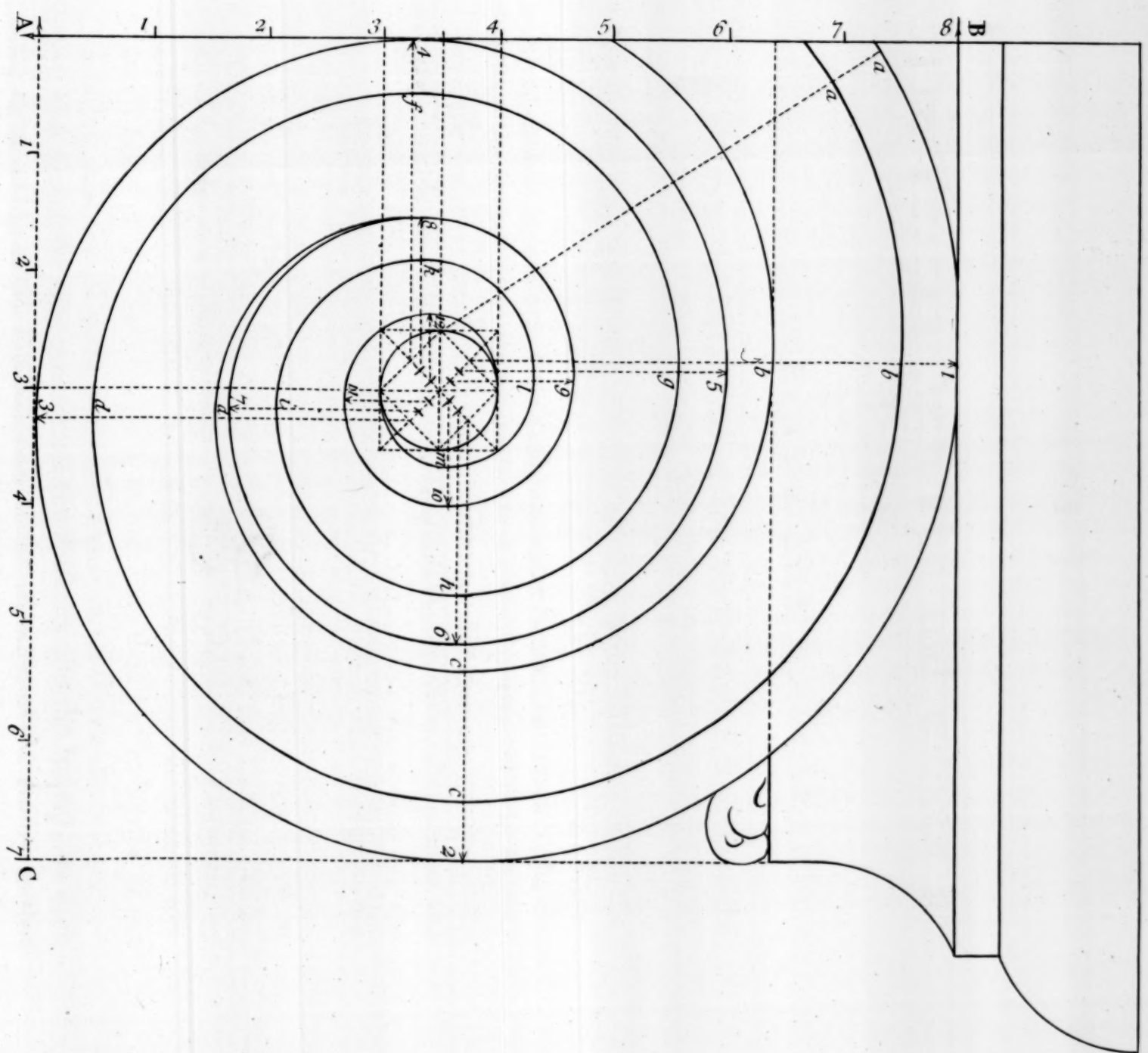
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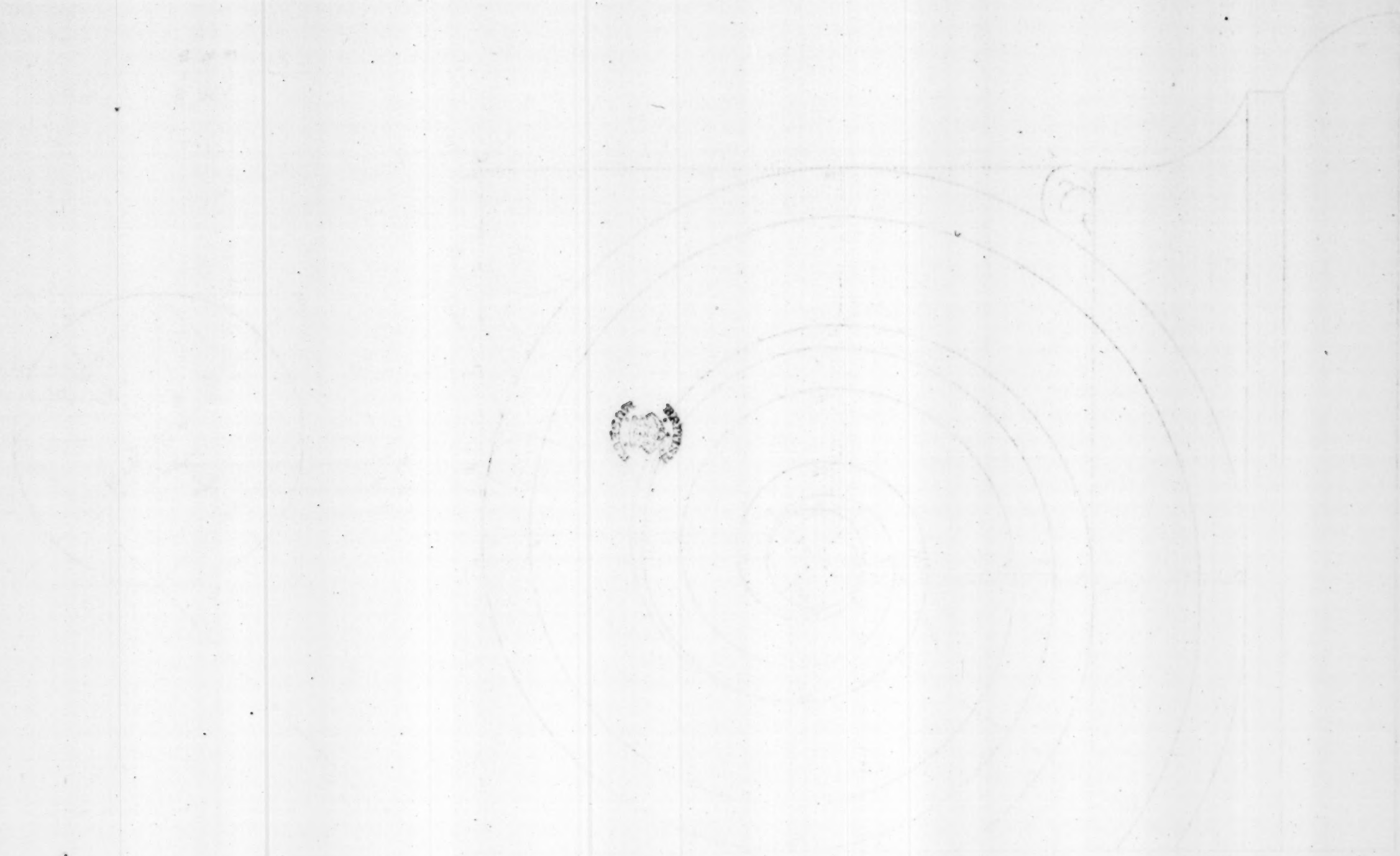




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8

The Tuscan Arch with and without its Pedestal.

P L A T E X X X .

TO form the *Tuscan* Arch without the Pedestal, first find out the Diameter of the Column, and divide the height into five parts; the fifth part is the height of the Entablature: Then divide the height of the Column into seven parts; one of them is the Diameter of the Column. Give one Diameter for the height of the Plinth. The distance from middle to middle of the Columns must be six Diameters. The Pilasters on each side of the Column are a Semidiameter of it in bigness, and the width of the Arch is four Diameters. To find the Center of the Arch, divide the height from the Ground-line to the under-part of the Entablature into three equal parts, as is expressed by a line on the right hand; the extremity of the second division is the Center of the Arch.

N. B. Let this be a general Rule not only for the *Tuscan* Arch with or without the Pedestal, but for all other Arches of the five Orders. When the Diameter and distance from middle to middle of the Columns, on each side the intended Arch, is found, the distance from Column to Column being divided into ten parts, one of them shall be the bigness of the Pilaster, and the other eight give the Opening of the Arch.

The Architrave that goes round the Arch, as also the Impost, are each of them as big as the Pilaster, or $\frac{1}{4}$ of the Opening of the Arch; so that if the distance from Column to Column be thus mechanically divided, as is marked on the Arches of each Order on the left hand, it will answer as if it were divided arithmetically. Although I have figured them arithmetically on the Plates, those figures are not to be taken notice of further than for the distances from Center to Center of the Columns; since the mechanical divisions mentioned before will do the same thing.

As to the *Tuscan* Arch with its Pedestal, divide its height into five parts, one of them is the height of the Pedestal: Then divide the height above the Pedestal into five parts, one of them is the height of the Entablature. The height from the Pedestal to the Entablature being divided into seven parts, one of them is the Diameter of the Column. The distance from middle to middle of the Columns must be seven Diameters, the Pilasters that support the Arch are $\frac{1}{2}$ of the Diameter, and the

G

Opening

Opening of the Arch will be four Diameters and $\frac{1}{2}$. The Center of the Arch is marked upon the upright line on the right hand.

The DORICK Arch with and without the Pedestal.

PLATE XXXI.

TO draw the *Dorick* Arch without the Pedestal, find the Diameter of the Column, and take the Semidiameter for the Plinth. The distance from middle to middle of the Columns must be six Diameters and $\frac{1}{2}$, the Pilasters that support the Arch must be half a Diameter, and the Opening of the Arch four Diameters and $\frac{1}{2}$. These dimensions cannot be varied, because of the divisions of the Metops and Trigllyphs. The Center of the Arch is found by the upright line on the right hand.

As to the *Dorick* Arch with the Pedestal, first find the Diameter of the Column; the distance from middle to middle of the Columns must be seven Diameters and a half, the Pilasters of the Arch will be $\frac{1}{2}$ of the Diameter, and the Opening of the Arch five Diameters and $\frac{1}{2}$.

The IONICK Arches.

PLATE XXXII.

THE distance from middle to middle of the Columns of the *Ionick* Arch without the Pedestal, so as to have the Modillions fall right, must be six Diameters; the Pilasters that support the Arch must be half a Diameter, and the Opening of the Arch four Diameters, &c.

The *Ionick* Arch with the Pedestal, from middle to middle of the Columns, must be seven Diameters and a half, the Pilasters $\frac{1}{2}$ of a Diameter, and the Opening of the Arch five Diameters and $\frac{1}{2}$. The Rule for finding the Center of the Arch is marked on the Column.

The CORINTHIAN Arch.

P L A T E XXXIII.

THE distance from middle to middle of the Columns of the *Corinthian* Arch, without the Pedestal, must be six Diameters and $\frac{5}{12}$; the Pilasters that support the Arch are $\frac{1}{2}$ of a Diameter, and the opening of the Arch four Diameters and $\frac{1}{2}$. The Rule to find the Center of the Arch is this: Divide the height, from the upper part of the Step to the under-part of the Entablature, into ten parts; the division from 6 to 7 being divided into four, the third is the Center, as appears by the line on the right hand.

The distance from middle to middle of the Columns of the *Corinthian* Arch, with the Pedestal, must be eight Diameters and $\frac{1}{12}$; the Pilasters that support the Arch $\frac{2}{3}$, and the opening of the Arch five Diameters and $\frac{1}{2}$. To find the Center of the Arch, divide the distance from the upper part of the Pedestal to the under part of the Entablature into ten parts; the sixth division will be the Center of the Arch.

The COMPOSITE Arch.

P L A T E XXXIV.

THE distance from middle to middle of the Columns of the *Composite* Arch, without the Pedestal, is six Diameters and a half, the Pilasters $\frac{2}{3}$, the Opening of the Arch four and $\frac{1}{2}$. The Center of the Arch is marked on the right hand.

The distance from middle to middle of the Columns of this Arch, with the Pedestal, is eight Diameters. The Center of the Arch is found by dividing the distance from the upper part of the Pedestal to the under part of the Entablature into ten parts; the Center is at the sixth division.

Of placing Columns over Columns.

IN designing of Colonnades, or Arcades, adorned with Columns of two or three Orders placed over one another, it is to be observed, that the first or lowermost Order, as the *Dorick* in the following Plate, must give the bigness of the Diameter to the Order immediately over it, being there the *Ionick*; which being $\frac{2}{3}$ of the Diameter of the *Dorick*, the Diameter of the *Ionick* will be equal to the diminished part of the *Dorick*, which diminishes $\frac{1}{3}$ of its Diameter. In small Draughts divide six Diameters of the *Dorick* into seven parts, $\frac{1}{7}$ will be the Diameter required for the *Ionick*. The same method is to be taken for finding the Diameter of the *Corinthian* over the *Ionick*. In this and all other compositions the Intercolumnation is directed by the Diameter; as also by the divisions of the Metops and Triglyphs, and Modillions. Their proportions in respect to the Diameter are as followeth:

The *Dorick* from middle to middle of the Triglyphs is one Diameter and $\frac{1}{2}$, the Triglyph $\frac{1}{2}$, and the Metops $\frac{1}{2}$ of a Diameter.

The *Ionick* from middle to middle of the Modillions is $\frac{1}{2}$ the Diameter, the Modillion $\frac{1}{2}$, and the Interval $\frac{1}{2}$ of it.

The *Corinthian* from middle to middle of the Modillions is $\frac{1}{2}$ of the Diameter, the Modillion $\frac{1}{2}$, and the Interval $\frac{1}{2}$.

The *Composite* from middle to middle of the Modillions is $\frac{1}{2}$ of the Diameter, the Modillion $\frac{1}{2}$, and the Interval $\frac{1}{2}$.

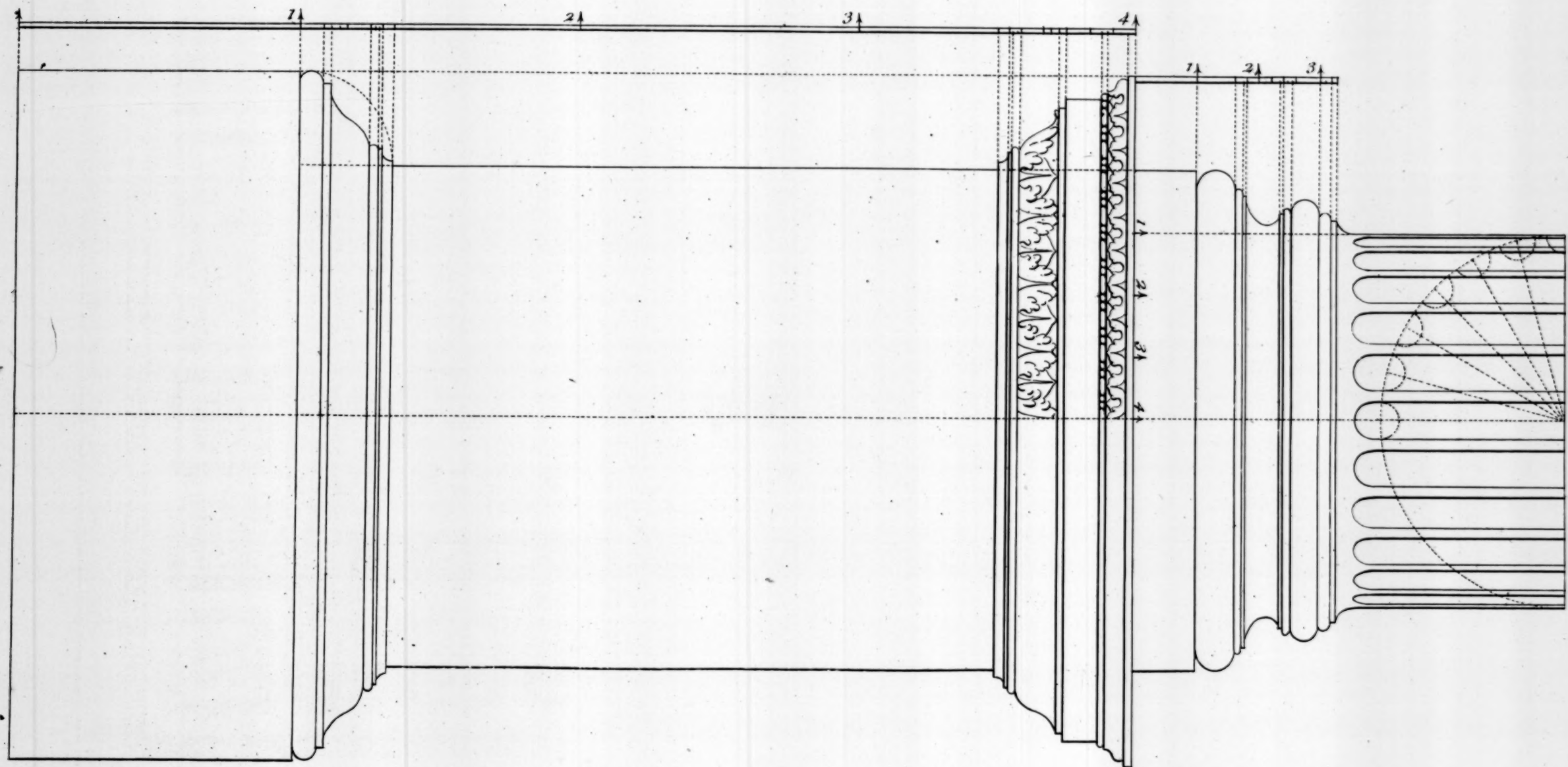
N. B. $\frac{1}{2}$ is twelve times in seven Diameters.

The IONICK and CORINTHIAN Orders over the DORICK.

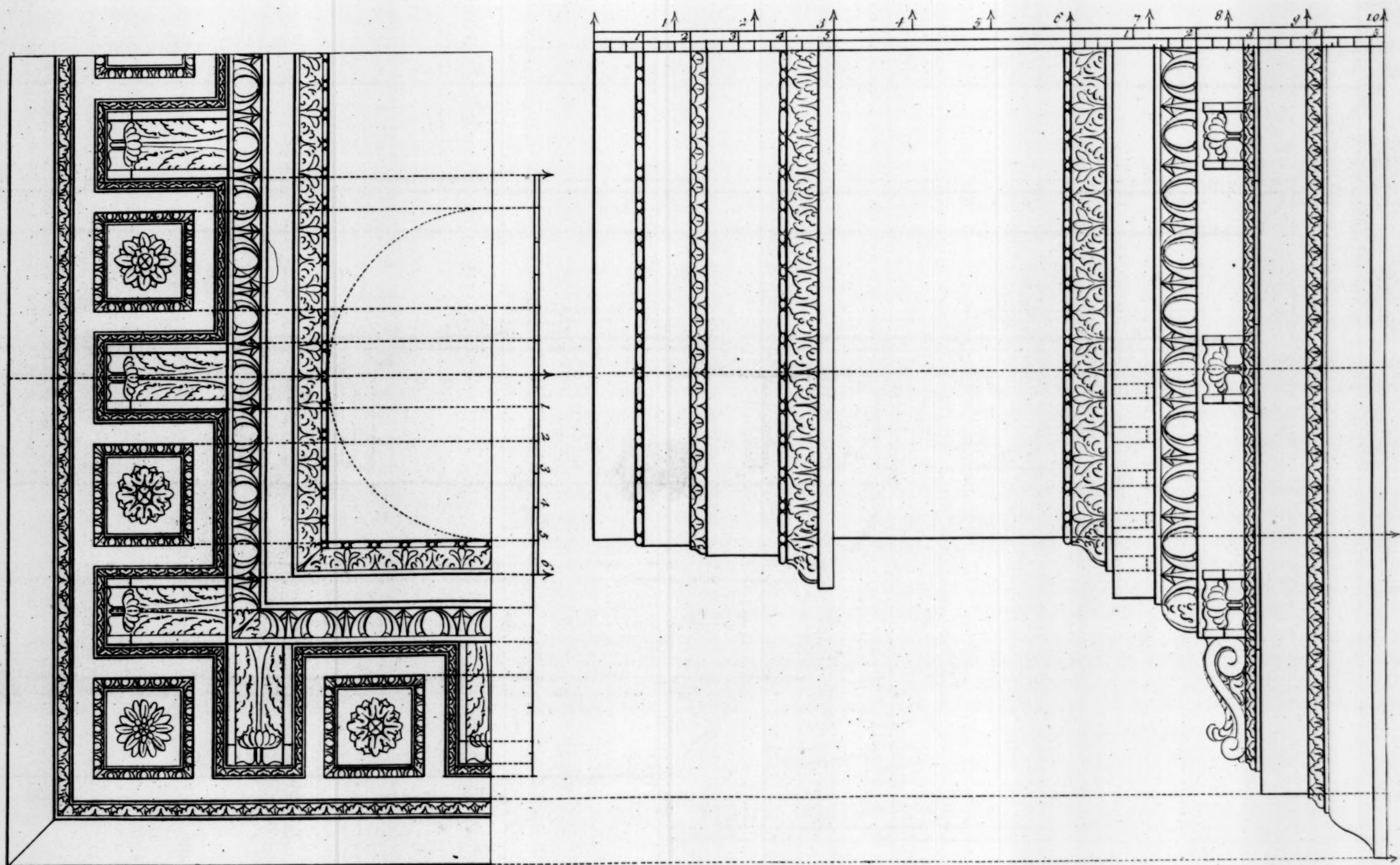
PLATE XXXV.

HERE are two examples of Orders over Orders; that on the left hand is the *Dorick* with the *Ionick* over it, and the *Corinthian* over the *Ionick*. The *Dorick*, being the lowermost Order, gives the rule to the other two, because of its Metops and Triglyphs; the distance of each Intercolumnation is figured.

The other example, on the right hand, is the *Corinthian* over the *Ionick*, on a Rustick Basement. The first example shews the Intercolunations

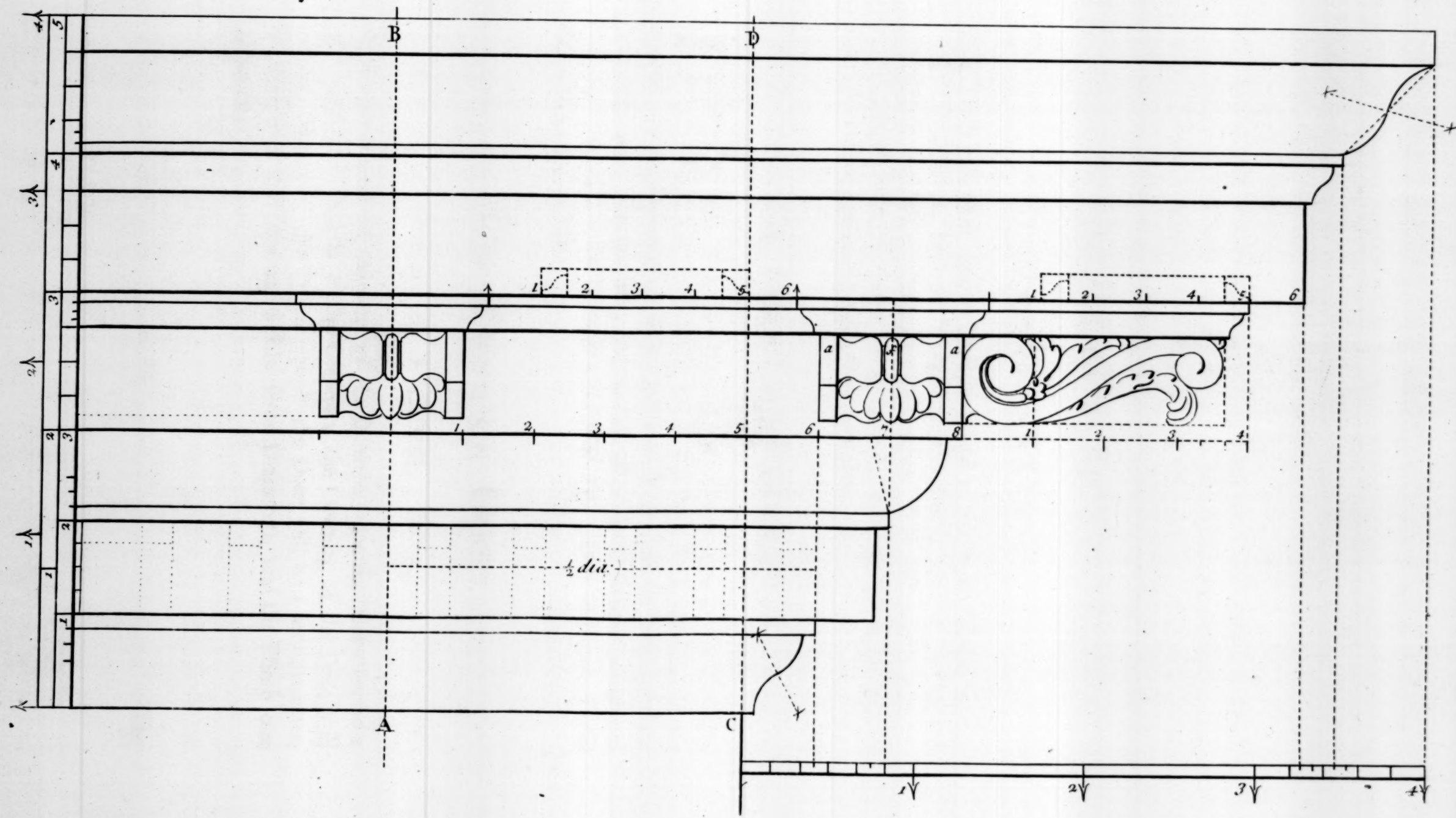








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nations where the Columns are insular; this shews the Intercolumnations when they are three quarter Columns. The distances betwixt middle and middle of the Columns are figured.

It was observed before, that the Pedestal should not be less than $\frac{1}{2}$ of the height of the Column and Entablature together; but here is a necessity to have it less, otherwise the Breasts of the Windows would be too high, if the Columns be of a large Diameter.

Arches over Arches.

PLATE XXXVI.

THERE must always be regard had to the lower Order, as was said before, because it regulates the Orders over it, so that the Modillions may fall regularly over each other. The distances from middle to middle of the Columns being figured, the Rules given before will be sufficient for explaining these two examples.

Of Doors and Gates.

DOORS and Gates have their Heads either square or circular; the latter ought not to be used, unless the Impost be above a Man's height. The proportion of their Openings is as one to two, or their height is twice their breadth; but the highest of them should not exceed two squares and $\frac{1}{2}$. To be more particular with respect to Doors, I will begin with the *Tuscan*.

The TUSCAN Door.

PLATE XXXVII. N° I.

FIRST find the Diameter of the Column, give six Diameters from middle to middle of the Columns, the Opening of the Door will be four Diameters, the Frame round the Door will be a Semidiameter, the height of the Opening will be seven Diameters, and the Plinth one Diameter.

The DORICK Door.

PLATE XXXVII. N° 2.

HAVING found the Diameter of the Column, give fix Diameters and $\frac{1}{2}$ to the distance from middle to middle of the Columns; four Diameters and $\frac{1}{2}$ is the Opening, and eight Diameters and a half go to the height, &c.

The IONICK Door.

PLATE XXXVII. N° 3.

THE distance from middle to middle of the Columns is fix Diameters and a half, the Opening four Diameters and a half, and the height of the Opening nine Diameters and a half, &c.

The Geometrical Rule to find the height of the Pediment is this: Draw the line *BG* through the middle of the intended Door (as in N° 2.) take the full extent of the Cornice *AC*, from the middle of it at *E* describe the Circle *ABCD*, and from *D* describe the Circle *AFCG*, the Segment *AFC* is the proper height of the Pediment.

The COMPOSITE Door.

PLATE XXXVIII. N° 1.

THE distance from middle to middle of the Columns, so that the Modillions may answer right, must be seven Diameters, the Opening four Diameters and $\frac{1}{2}$, and the height of the Opening ten Diameters and $\frac{1}{2}$, &c.

The CORINTHIAN Door.

PLATE XXXVIII. N° 2.

THIS Door hath seven Diameters betwixt middle and middle of the Columns, the Opening is four Diameters and $\frac{1}{2}$, and the height ten Diameters and $\frac{1}{2}$, &c.

Another Door of the CORINTHIAN Order.

PLATE XXXVIII. N° 3.

THE distance from middle to middle of the Columns is seven Diameters and $\frac{1}{2}$, the Opening four Diameters and $\frac{1}{2}$, and the height ten Diameters and $\frac{1}{2}$, &c.

The TUSCAN Arched Door with a Pediment and Ballustrade.

PLATE XXXIX. N° 1.

THE distance from middle to middle of the Columns must be six Diameters, and the Opening four. The Rule for finding the Center of the Arch appears upon a line on the right hand, &c.

The DORICK Arched Door.

PLATE XXXIX. N° 2.

THE distance from middle to middle of the Columns is six Diameters and $\frac{1}{2}$, and the Opening of the Arch is four Diameters and $\frac{1}{2}$, &c.

The

The IONICK Arched Door.

PLATE XXXIX. N° 3.

THE *Ionick* Arched Door has seven Diameters from middle to middle of the Columns, and the Opening of the Arch is four Diameters and a half. The prick'd line on the right hand (which is the height from the Ground-line to the under-part of the Entablature) being divided into three equal parts, the second division gives the Center of the Arch, &c.

The COMPOSITE Arched Door.

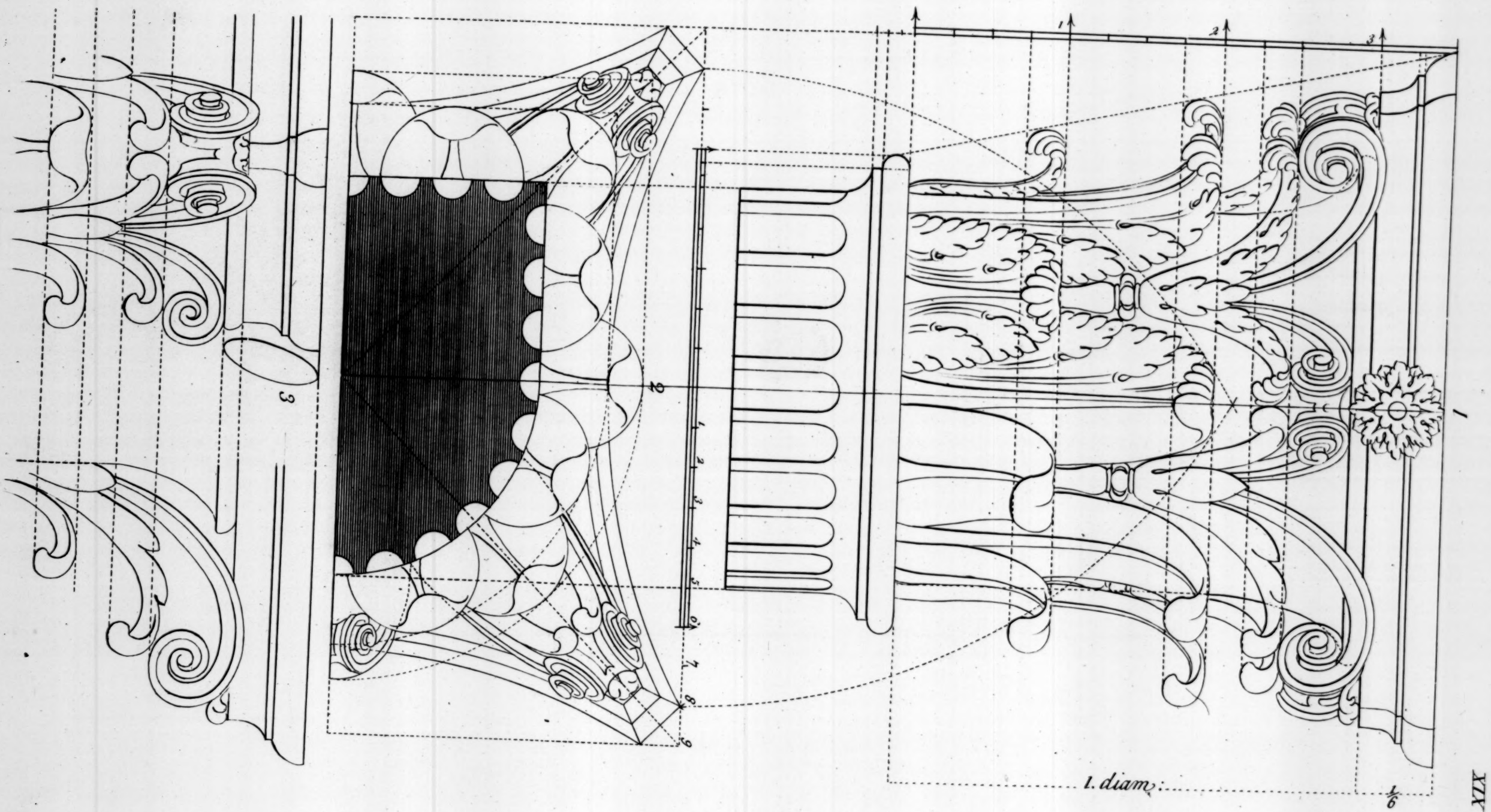
PLATE XL. N° 1.

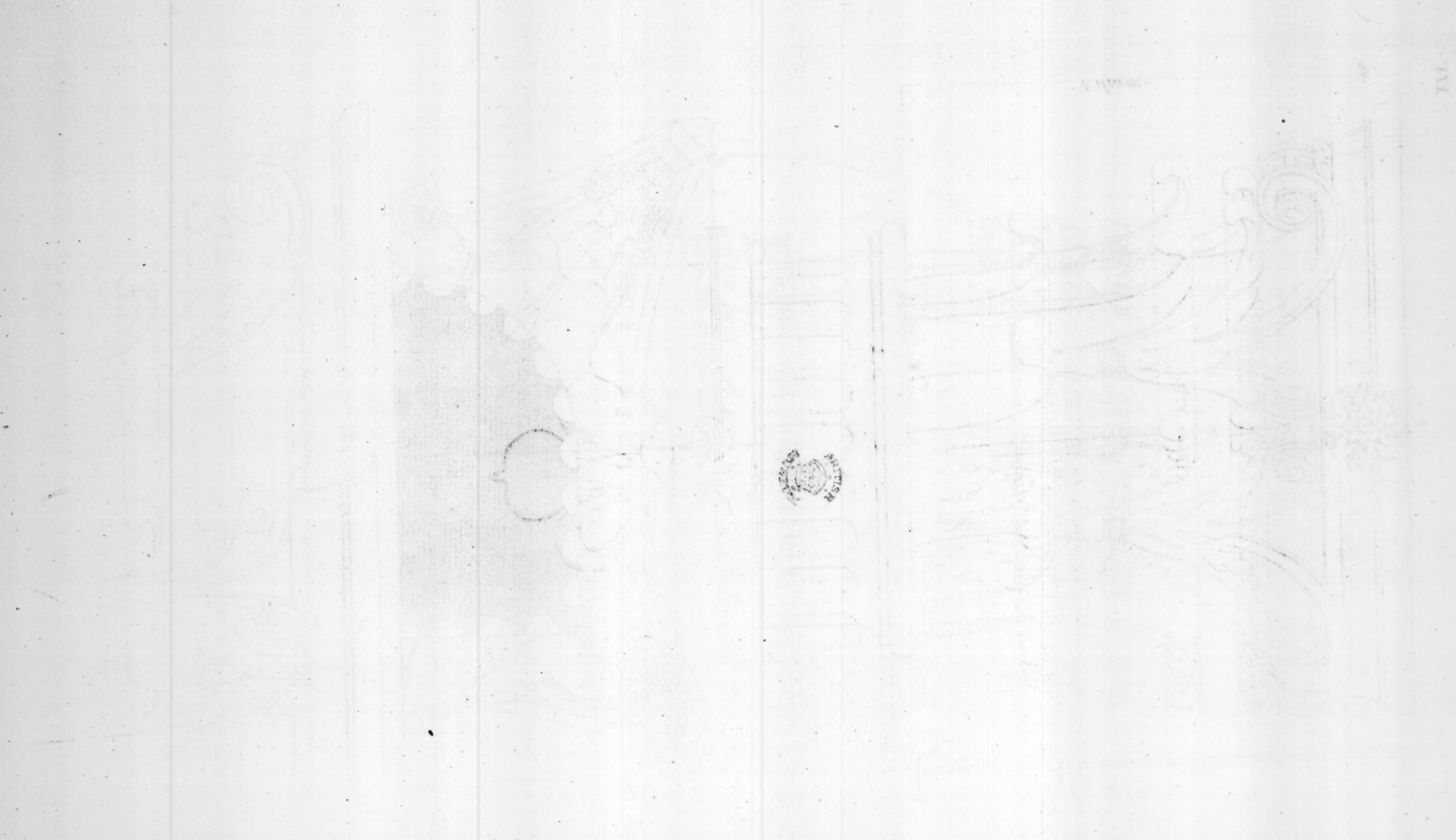
FROM middle to middle of the Columns there are seven Diameters and a half, the Opening of the Arch is five Diameters. The line on the right hand gives the Center of the Arch, and that on the left gives the general divisions, &c.

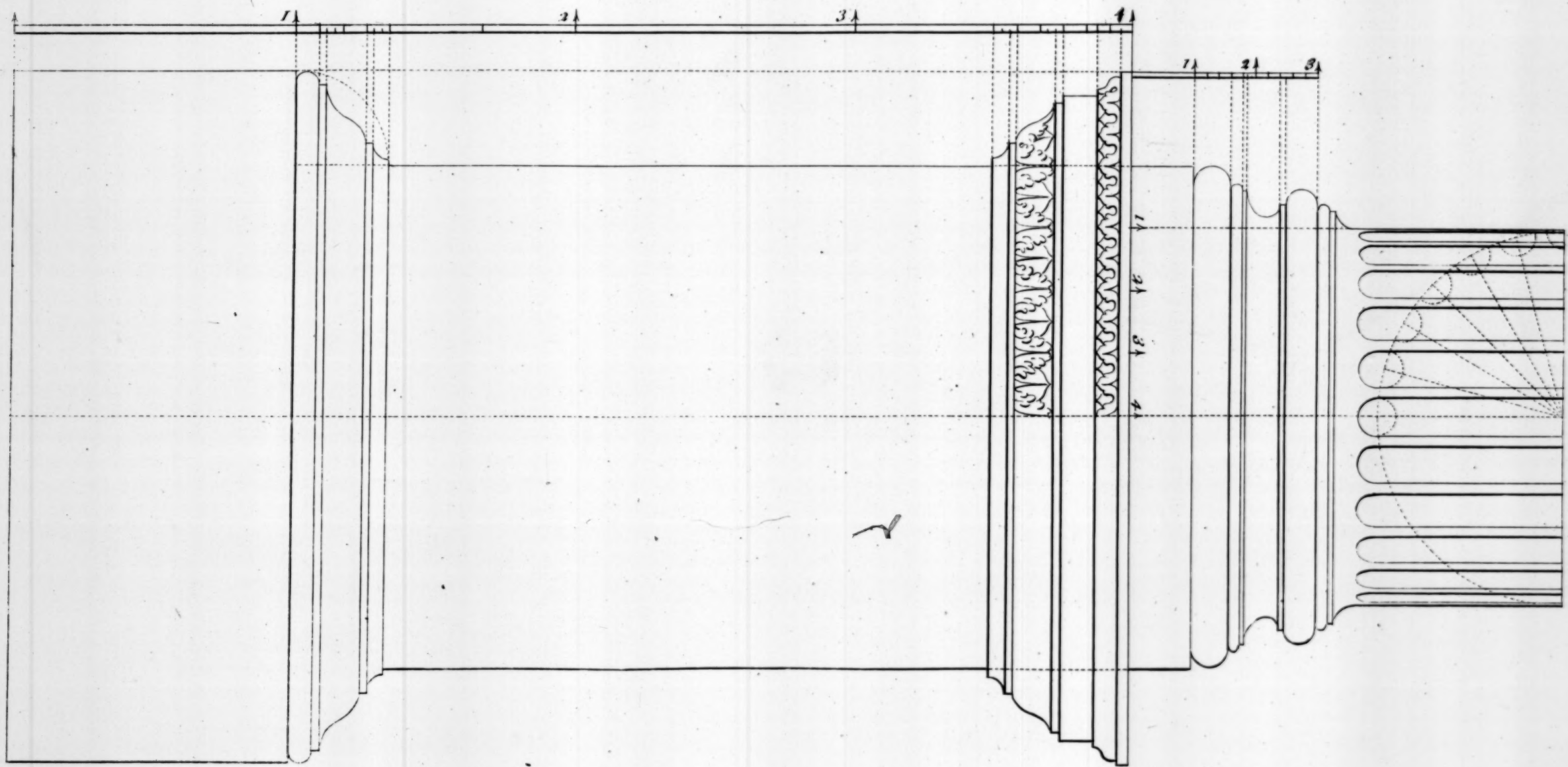
The CORINTHIAN Arched Door with double Columns.

PLATE XL. N° 2.

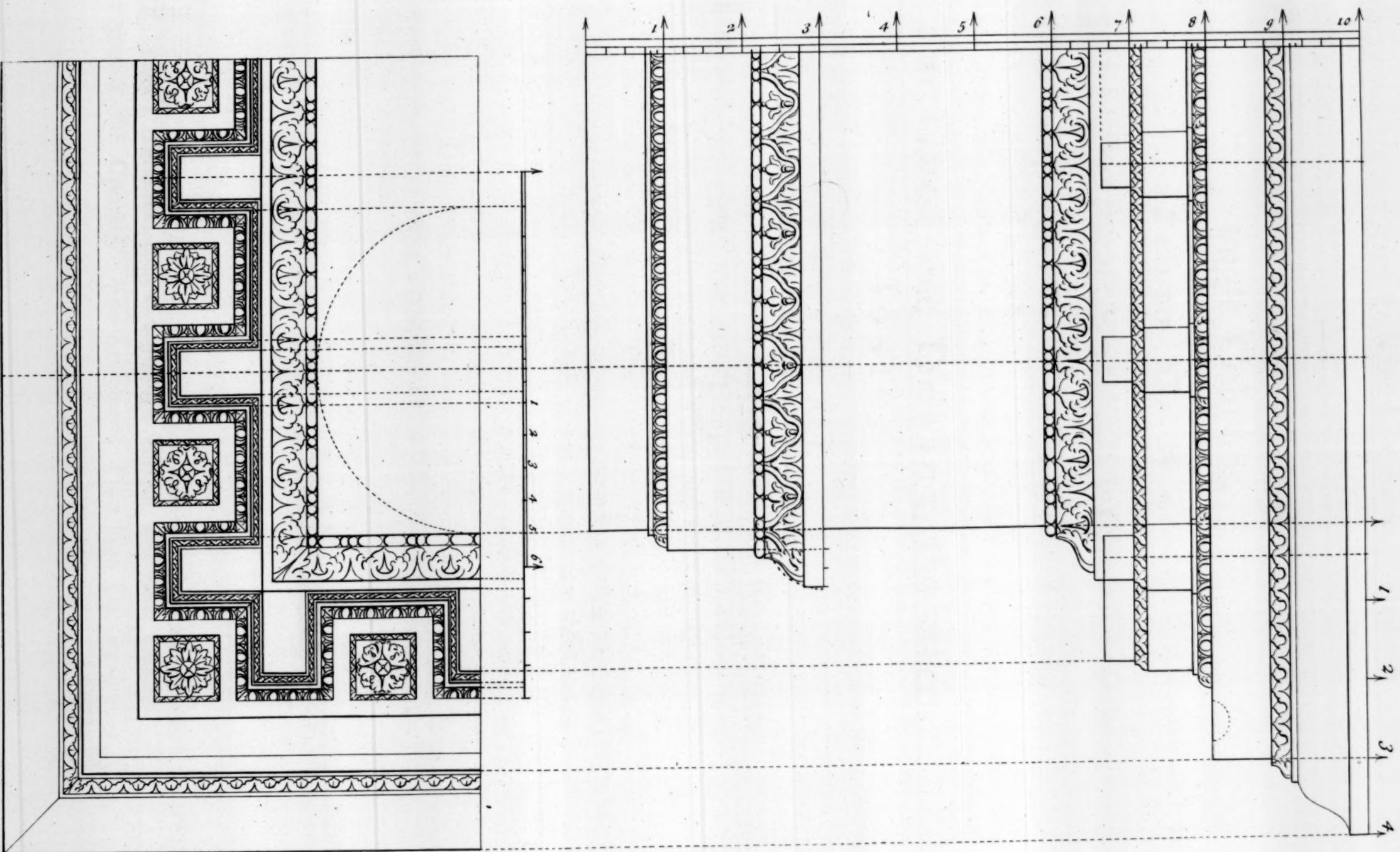
THE distance from middle to middle of the Columns on each side of the Arch is seven Diameters, and from middle to middle of the double Columns one Diameter and $\frac{1}{2}$, and the Opening of the Arch four Diameters and $\frac{1}{2}$, &c.













The CORINTHIAN Arched Door with single Columns.

PLATE XL. N^o 3.

THE distance from middle to middle of the Columns is seven Diameters and $\frac{1}{2}$, the Opening of the Arch is five Diameters, &c.

M. B. I have given great variety of Doors in my Book of Designs and ORNAMENTS, published in 1728.

Two Gates; one DORICK, the other IONICK.

PLATE XLI.

IN the *Dorick* Gate, in order to have the Metops and Triglyphs justly divided, the distance from middle to middle of the Columns next the Arch must be seven Diameters and a half, and from middle to middle of the lesser Intercolumnation three Diameters and $\frac{1}{2}$, and the Opening of the Arch five Diameters. The Attick is $\frac{1}{2}$ of the whole height of the Order, including the Pedestal, as appears by a line on the left hand; the Center of the Arch, or the height of the Impost from the Ground-line, is marked on the right hand.

The *Ionick* Gate hath eight Diameters betwixt middle and middle of the Columns on each side of the Opening, which is six Diameters and a half; the distance from middle to middle of the Columns of the lesser Intercolumnation is three Diameters and a half, the Attick is $\frac{1}{2}$ of the height of the Order.

Three Doors with Architraves.

PLATE XLII.

I Have given on this Plate, three different sorts of Doors with Architraves. The first has its Opening two squares, and the Architrave is $\frac{1}{2}$ part of the Opening. The Architrave, Frize and Cornice are in
I height

height one half of the breadth of the Opening; and that being divided into three parts, one goes to the Architrave; the other two being divided into seven, three go to the Frize, and four to the Cornice. For the particular divisions see Plate XLVI.

The second Door is two squares and $\frac{1}{2}$, having Architrave, Frize, and Cornice, with Scrolls and Pilasters. The Architrave is $\frac{1}{3}$ of the breadth of the Opening, and two thirds of the breadth of the Architrave give the bigness of the Pilaster, upon which the Scroll is fixed. The Entablature, as to its principal parts, is divided as in the former example. For the particular parts see Plate XLVI.

The third Door is two squares, and hath the same proportions with the first; but it hath a circular Pediment and swell'd Frize, and the Architrave is kneed $\frac{1}{4}$ part of the Opening. For the Particulars see Plate XLVI.

Rustick Doors.

PLATE XLIII.

I Have given on this Plate five different sorts of Rustick Doors, although they appear but three: They are all two squares in height, or their height is twice their breadth. The method of drawing them is so easy, the parts being figured, that it's needless to give any further description of them.

Windows and Niches.

PLATE XLIV.

HERE are three different kinds of Windows and Niches, all with Architraves, Frizes and Cornices. The Breast, or Pedestal-part, of the Window is $\frac{1}{2}$ of the whole height, as is shewn by a line on the left hand; the height of their Openings is two squares. There are Niches inscribed within them. The Architraves, Frizes and Cornices have the same proportions as in the Doors. For a greater Variety of Windows and Niches, see my Book of DESIGNS and ORNAMENTS before mentioned.

The

The Proportions of Windows for different heights of Rooms.

PLATE XLV.

ON this Plate is shewn the different proportions of Windows for different heights of Rooms. There are two of two Squares, one of a Square and $\frac{1}{2}$, one of a Square and a half, one of a Square and $\frac{1}{3}$, and one square Window. The Architraves in all of them are $\frac{1}{4}$ of their Openings.

Cornices for Doors, Windows and Niches.

PLATE XLVI.

HERE are three different sorts of Cornices for Doors, Windows and Niches. The outer line on the left hand divides the whole height into three parts, one of which goes to the Architrave; the two upper parts being divided into seven, as appears upon the second line, three of them go to the Frize, and four to the Cornice, which is subdivided into its members by the third line. The projection of the Cornice of the first is divided into three parts and subdivided; the projection of the second is divided into five parts and subdivided, and that of the third into four and subdivided for the projections of the members. The Architraves are divided into four parts and subdivided, and they project $\frac{1}{4}$ of their height.

A Rule for drawing the Scroll for the Support of Cornices over Doors, Windows and Niches.

PLATE XLVII.

THE Architrave, Frize and Cornice is in height half the breadth of the Opening, and the Architrave $\frac{1}{4}$, as in the former examples. The Frize and Cornice being divided into seven parts, four go to the Cornice and three to the Frize, which gives the bigness of the upper Spiral

height one half of the breadth of the Opening; and that being divided into three parts, one goes to the Architrave; the other two being divided into seven, three go to the Frize, and four to the Cornice. For the particular divisions see Plate XLVI.

The second Door is two squares and $\frac{1}{2}$, having Architrave, Frize, and Cornice, with Scrolls and Pilasters. The Architrave is $\frac{2}{3}$ of the breadth of the Opening, and two thirds of the breadth of the Architrave give the bigness of the Pilaster, upon which the Scroll is fixed. The Entablature, as to its principal parts, is divided as in the former example. For the particular parts see Plate XLVI.

The third Door is two squares, and hath the same proportions with the first; but it hath a circular Pediment and swell'd Frize, and the Architrave is kneed $\frac{1}{3}$ part of the Opening. For the Particulars see Plate XLVI.

Rustick Doors.

PLATE XLIII.

I Have given on this Plate five different sorts of Rustick Doors, although they appear but three: They are all two squares in height, or their height is twice their breadth. The method of drawing them is so easy, the parts being figured, that it's needless to give any further description of them.

Windows and Niches.

PLATE XLIV.

HERE are three different kinds of Windows and Niches, all with Architraves, Frizes and Cornices. The Breast, or Pedestal-part, of the Window is $\frac{1}{2}$ of the whole height, as is shewn by a line on the left hand; the height of their Openings is two squares. There are Niches inscribed within them. The Architraves, Frizes and Cornices have the same proportions as in the Doors. For a greater Variety of Windows and Niches, see my Book of Designs and ORNAMENTS before mentioned.

The

The Proportions of Windows for different heights of Rooms.

PLATE XLV.

ON this Plate is shewn the different proportions of Windows for different heights of Rooms. There are two of two Squares, one of a Square and $\frac{1}{2}$, one of a Square and a half, one of a Square and $\frac{1}{3}$, and one square Window. The Architraves in all of them are $\frac{2}{3}$ of their Openings.

Cornices for Doors, Windows and Niches.

PLATE XLVI.

HERE are three different sorts of Cornices for Doors, Windows and Niches. The outer line on the left hand divides the whole height into three parts, one of which goes to the Architrave; the two upper parts being divided into seven, as appears upon the second line, three of them go to the Frize, and four to the Cornice, which is subdivided into its members by the third line. The projection of the Cornice of the first is divided into three parts and subdivided; the projection of the second is divided into five parts and subdivided, and that of the third into four and subdivided for the projections of the members. The Architraves are divided into four parts and subdivided, and they project $\frac{1}{4}$ of their height.

A Rule for drawing the Scroll for the Support of Cornices over Doors, Windows and Niches.

PLATE XLVII.

THE Architrave, Frize and Cornice is in height half the breadth of the Opening, and the Architrave $\frac{1}{3}$, as in the former examples. The Frize and Cornice being divided into seven parts, four go to the Cornice and three to the Frize, which gives the bigness of the upper Spirals

ral of the Scroll; the longest part of the Scroll *FG* takes four parts, and the lower Spiral two parts. The projection of each Spiral is to its height as 8 to 7. The thickness of the Scroll is always the same with that of the Plaster it is fixed upon, which is $\frac{1}{3}$ of the Architrave.

The Spiral is formed in the same manner as the *Ionick* Volute, with this difference, that the *Ionick* Volute has twelve Centers, this has but eight. The Eye of the Volute is drawn by itself larger below, with its divisions, where the Centers are marked. Begin the Spiral with the first Center from 1 to 2, proceed from 2 to 3, &c.

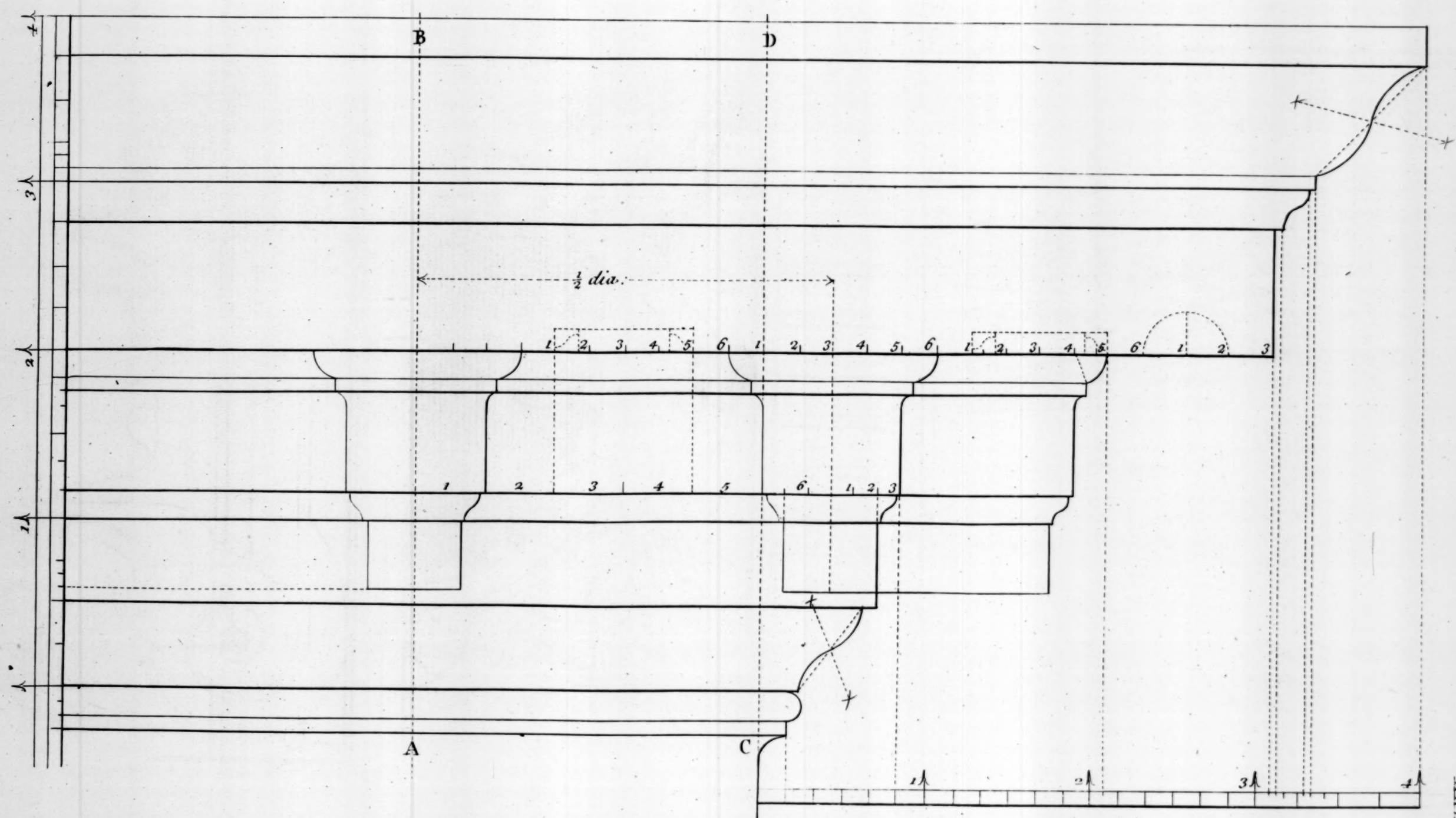
The Centers of the Segments are found in this manner; the first is on the same line with the first Center of the upper Spiral, continued to the adjoining Plaster at *D*. The lower is six parts of the smaller Spiral distant from the extremity of the lesser Spiral, expressed by the Quadrant in prick'd lines *ABC*; and the line *CD*, drawn from Center to Center, joins both Segments in their proper lengths. The Foldings in front, or the thickness of the Scroll from *E* to *E*, being divided into seven parts, one goes to each of the outer Fillets, and one to the middle Bead *H* with its Lifts, and each Lift is $\frac{1}{7}$. The Center of the Bead is lower than the outer Fillets by $\frac{1}{7}$.

Venetian Windows.

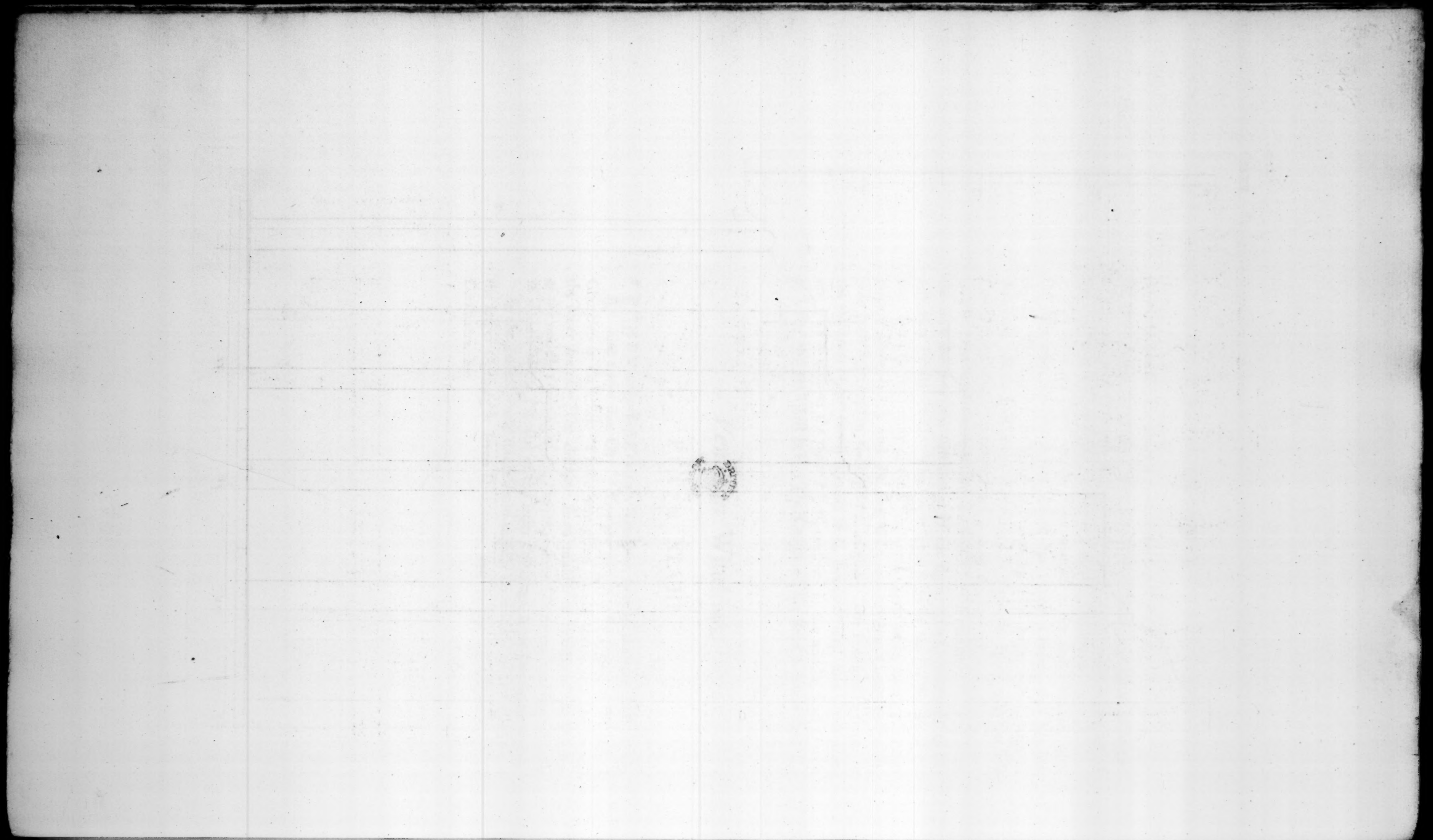
PLATE XLVIII.

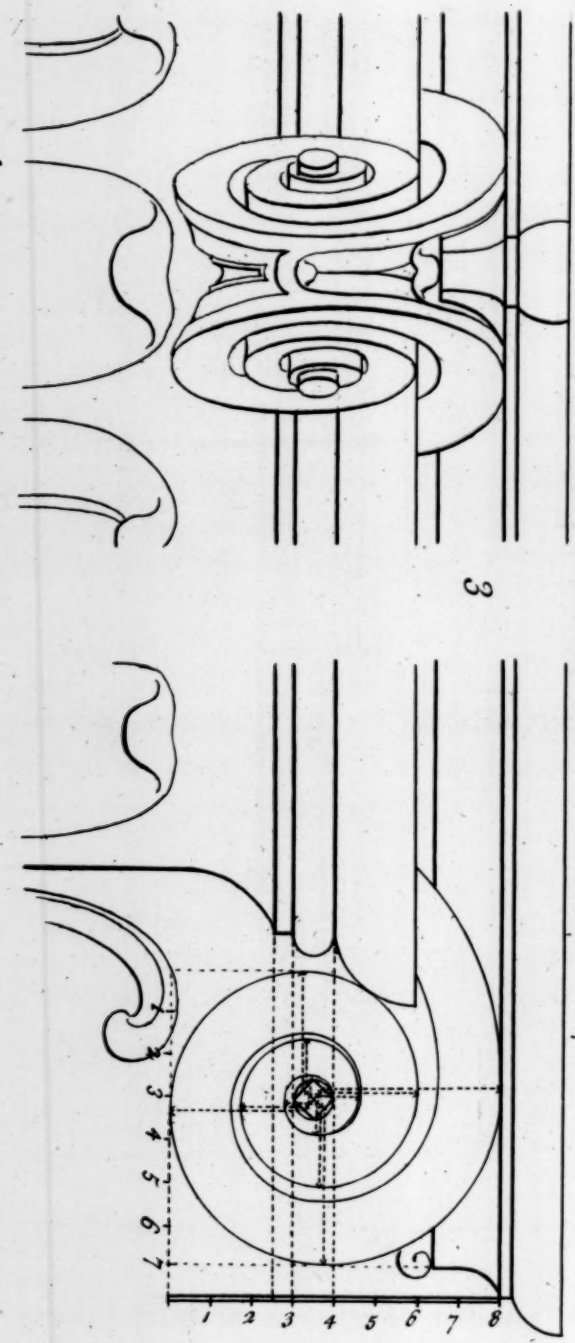
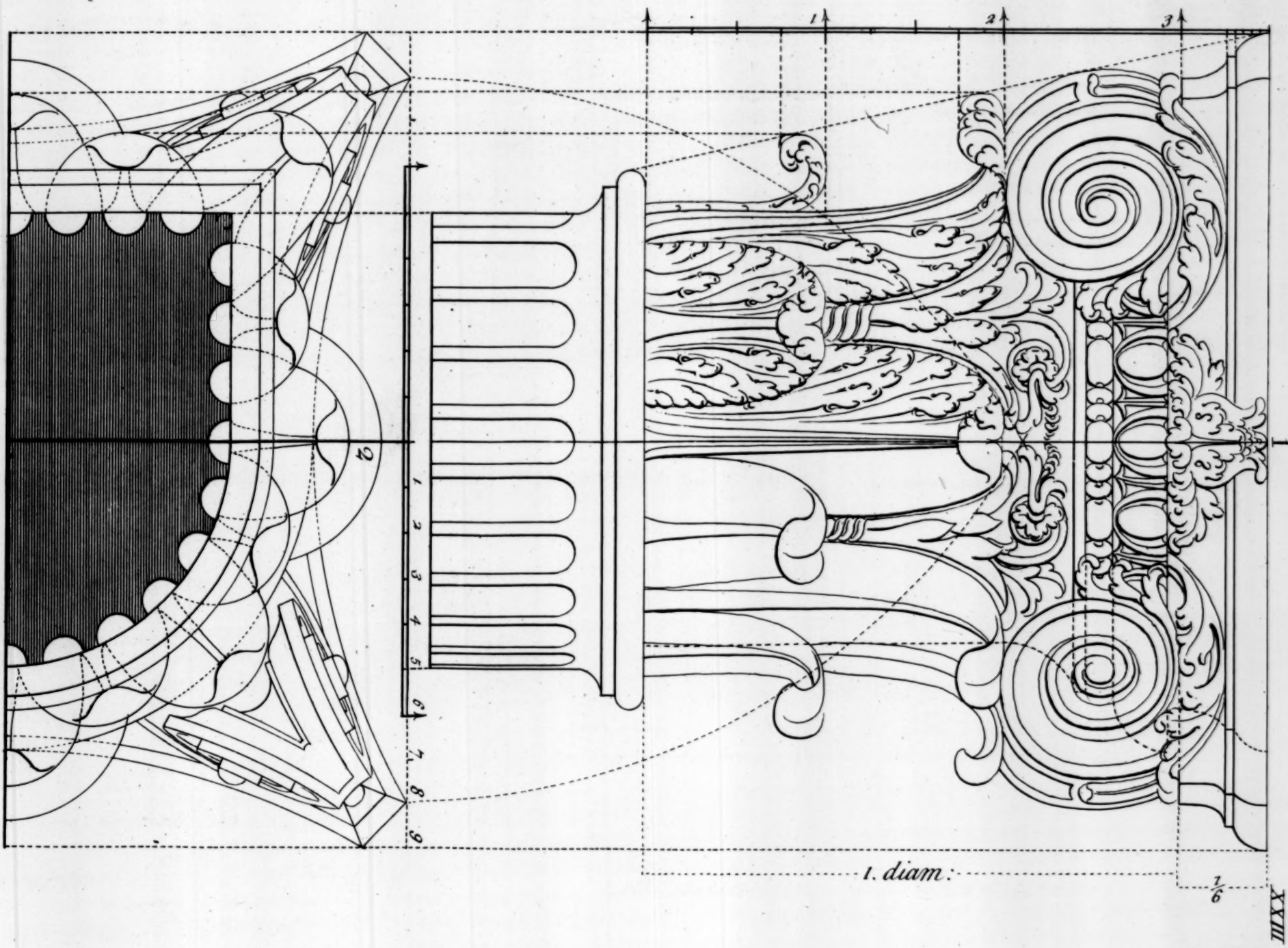
THEY are called *Venetian* Windows, because they are most used in and about that City. They are proper to be placed at the end of Churches or Galleries. I have here given two of them, one *Dorick* and the other *Ionick*. The distance from middle to middle of the Pilasters of the middle Opening of the *Dorick* is seven Diameters, and from middle to middle of the Pilasters of the lesser Openings, three Diameters and $\frac{1}{2}$.

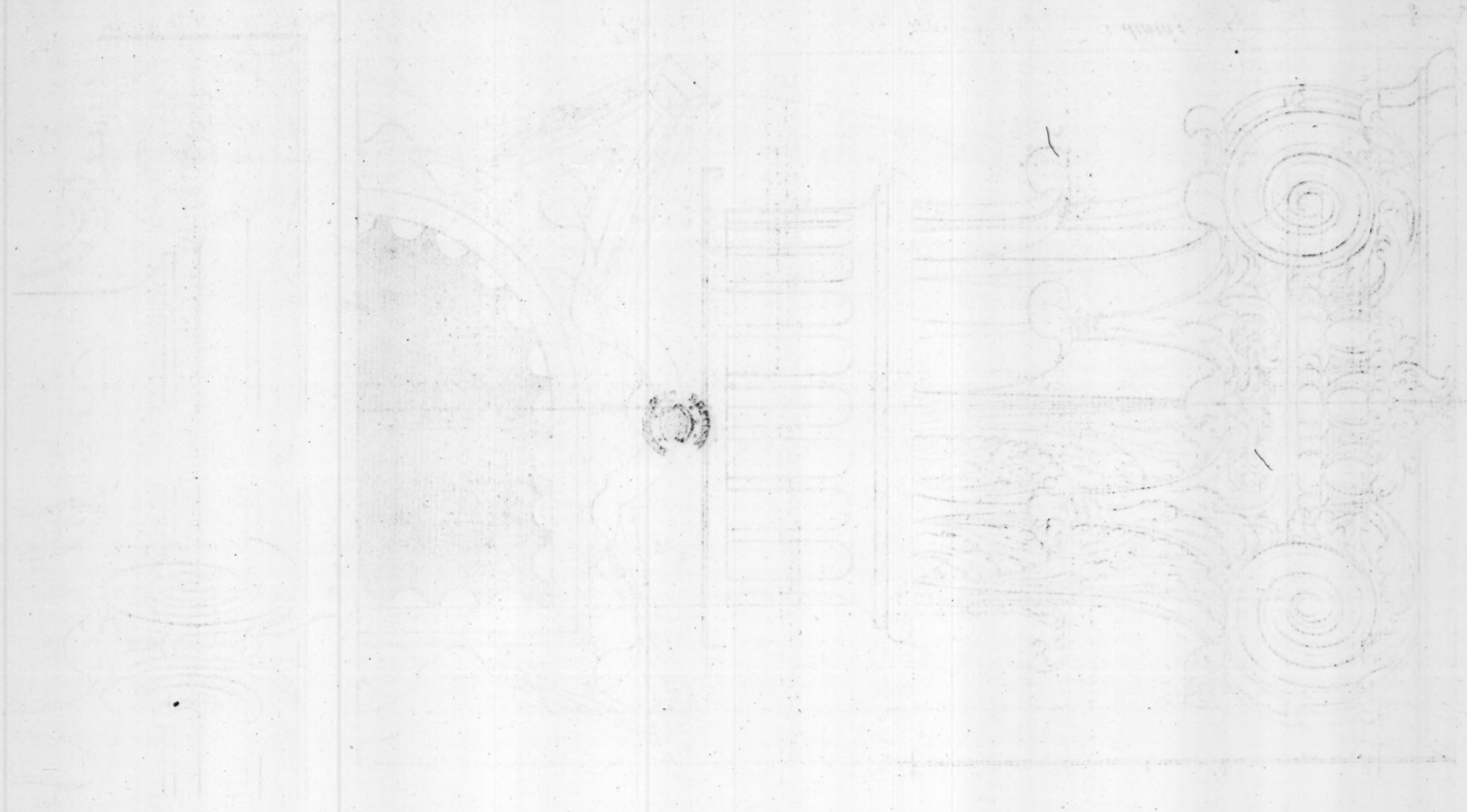
In the *Ionick*, the distance from middle to middle of the Pilasters of the larger Opening is seven Diameters, and in the lesser Openings four Diameters, &c.

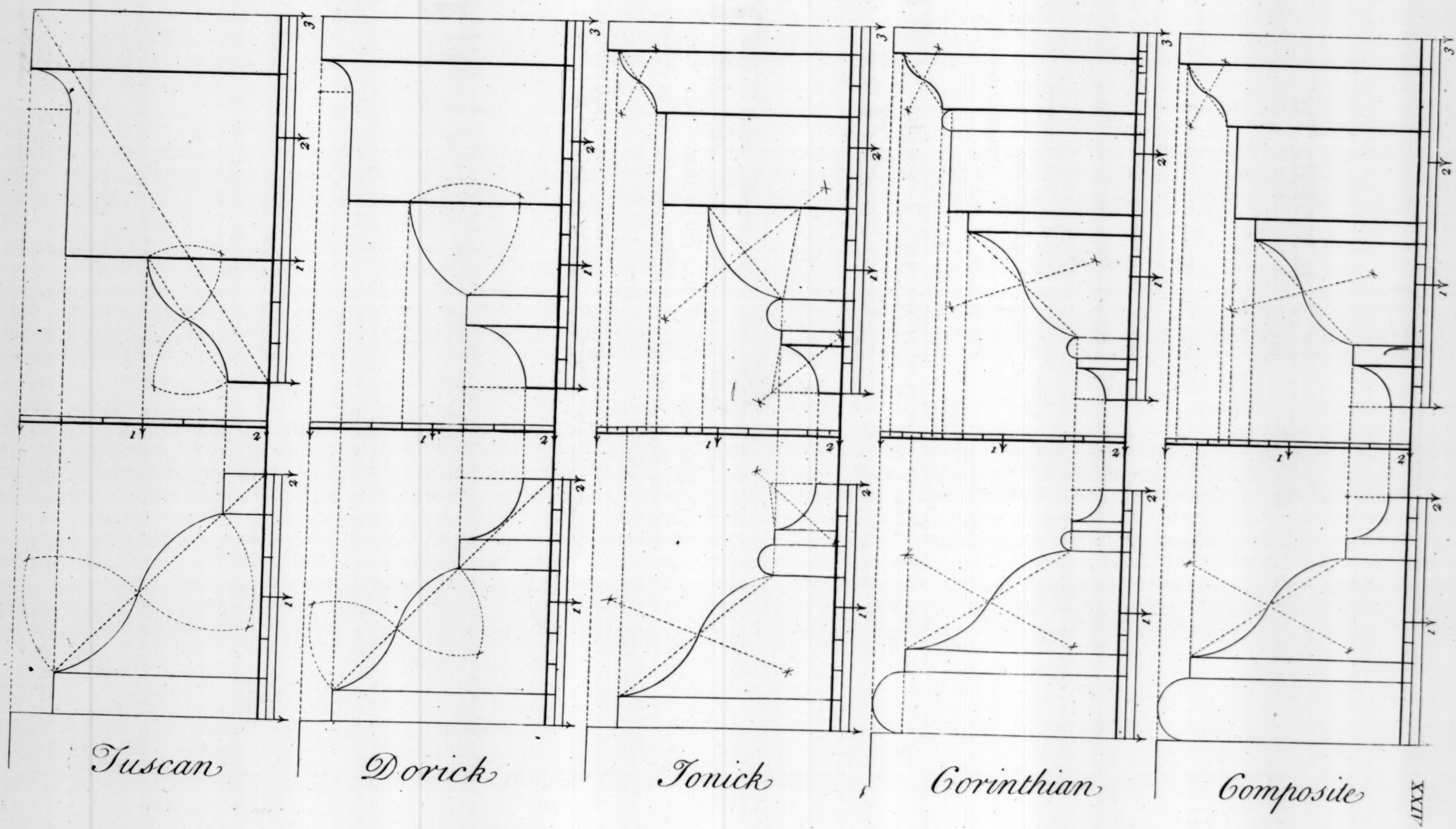


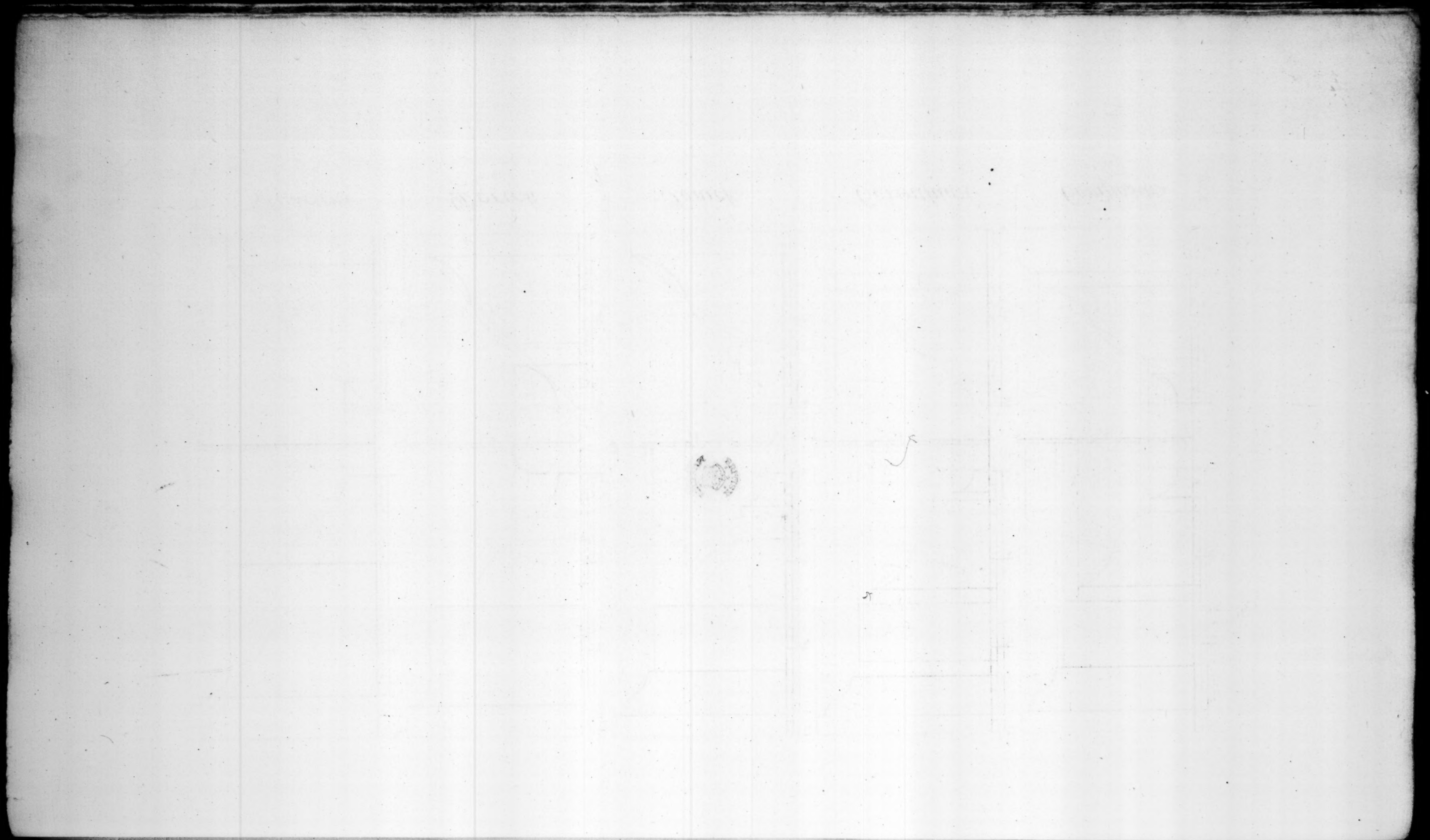
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Six different Chimney-pieces.

PLATE XLIX.

CHIMNEY-pieces are larger or smaller, according to the bigness of Rooms for which they are designed. I have on this Plate given six Draughts, which are so marked that the proportion of their breadth to their height may be readily seen. The three uppermost are square, and their Architraves are $\frac{1}{2}$ of their Openings; in those below, being larger, the Openings vary, which the divisions plainly shew. The upright Scales shew the proportions of their height, and of their Architraves, Friezes and Cornices.

Three other Chimney-pieces with Frames for Pictures or Pannels over them.

PLATE L.

THREE three Chimney-pieces have Frames over them adorned with Pediments; they have the same proportions as to their Openings, as those in the former Plate, but these are more ornamental. As to the proportion of their parts, observe the Scale to each of them.

Three more Chimney-pieces.

PLATE LI.

THREE have broken Pediments over them. There may be drawn a great variety of them, and all good in their kind, if the Draughtsman have a good taste. Their Scales, as in the former; shew the proportion of their parts. I have given several more Designs of Chimneys in my Book of DESIGNS and ORNAMENTS.

Three different sorts of large Mouldings
for Pannel or Picture frames fixed in
Rooms.

PLATE LII.

YOU have in this Plate three different sorts of Mouldings for Pannel or Picture frames to be fixed in Rooms, with the manner of their Carving. Their Profiles are on the left hand, divided and figured; so that if the divisions are carefully observed they will be found very easy. With a little alteration they may serve for Surbales to Rooms.

Five different Mouldings for smaller
Pannels.

PLATE LIII.

THESE five sorts of Mouldings are for smaller Pannels, to be placed over Doors, or between larger Pannels, to bring them to a just proportion when they are too broad. The divisions of their Profiles on the left hand shew how to form them.

The proportions of Rooms, and the
Coving of their Cielings.

PLATE LIV.

I Have given on this Plate the different proportions of Rooms, as to their length, breadth and height; as also the proportion of their Coves and Arched Cielings. The first is a Cube of 20 feet, its Cove is $\frac{1}{4}$ of its height. The second is 20 feet by 25, or a Square and $\frac{1}{2}$; its height is $22\frac{1}{2}$; and its Cove is $\frac{1}{4}$ of its height. The third is 20 by 30 feet, or a Square and a half, and has 25 feet for its height, and its Cove is $\frac{1}{4}$ of its height. The fourth is twenty feet by thirty-five, or a Square and $\frac{1}{2}$; and is 27 feet high, and its Arch is $\frac{1}{4}$ of its height. The fifth is 20 by 40 feet, or two Squares or the double Square; its height is 30 feet, and its

Arch

Arch is $\frac{1}{3}$ of its height : So that the Rule for finding the height of Rooms of these sorts is this ; let the length and breadth of them be added together, half the Sum is the height of the Room. The last is a Gallery 100 feet long and 20 feet broad, the length being five times its breadth : But let the Gallery be longer or shorter as it will fall out, its height must answer to the double Square. These are the just proportions of Rooms as handed down to us by the greatest Masters, if their Cielings are Coved or Arched ; but if they are flat, their height will be agreeable if made equal to their breadth ; as for example, a Room 30 feet long and 20 broad should be 20 feet high ; and even Rooms of these proportions are often Coved, and that sometimes $\frac{1}{4}$ and $\frac{1}{5}$. But in the common Buildings in *England*, we are forced to give Rooms a lower proportion in regard to the coldness of the Climate and the expence of building ; so that the height is sometimes $\frac{1}{4}$ less than the breadth, as 20 feet broad by 16 feet high, and sometimes $\frac{1}{5}$ less, as 20 feet broad by 15 feet high, which is the lowest proportion they should have.

Of Cielings in general and their Ornaments.

PLATE LV.

HERE are different ways of adorning Cielings. I have given here three different ways ; one with large square Pannels, another with large Octagon Pannels and Squares, and the third with large Hexagons and Rhombs ; all with Roses in the middle of their Pannels, and bordered with Frets and *Guilcher's*. The proportions of each are figured on their Profiles on the left hand. These may serve either for Curvilinear or Flat Cielings. By Curvilinear, I mean either Semicircular or Elliptical. I have made the Cieling of the Church of *St. Mary le Strand* with Squares and Rhombs, and the Elliptical Cieling of *St. Martin's* in the Fields with large Squares, the Angles taken off, with Roses in them ; both which Cielings have a very good effect.

Of Coved Cielings and their Ornaments.

P L A T E LVI.

I Have given on this Plate fix different ways of adorning Coved Cielings; the two uppermost are with Grinds. Each Cieling hath its Platform under it. The Coves of Rooms are generally made to be a Quadrant of a Circle, adorned either with Fretwork or Painting, and sometimes with both.

Of Cupola's and Circular Softes.

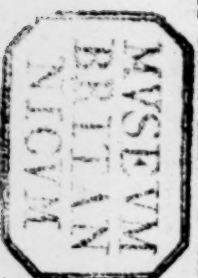
P L A T E LVII.

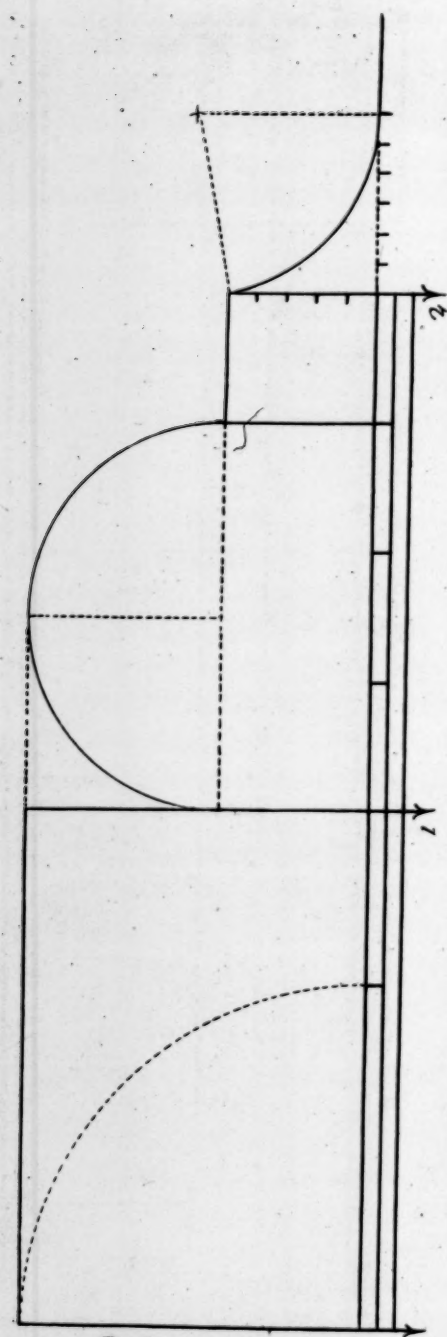
FIG. 1. *AB* is the breadth of one side of an Octagonal Cupola, from the middle of which erect the perpendicular line *DC*, draw the lines *CA*, *CB*; the Triangle *ABC* makes the Platform of an eighth part of the Cupola.

Fig. 2. The Profile is to be made by a Quadrant of a Circle *ABC*, directly over the Plan or Platform; divide half the line *AB* into seven parts, as here figured; fix of them will make two Pannels, and the seventh will remain for the Border. The same divisions must be marked on the Profile over the Base-line *AB*, in this manner; take for the Border at the bottom four parts, marked in the Plan, and place them on the Profile from the Base-line to N^o 1, from which draw a line parallel to the Base-line of the Plan, and measure the length of two Central lines marked 2, 2, in the Plan, and place it in the Profile for the second Pannel; from thence draw another parallel line, and measure the length of the two Central lines at 3, 3, in the Plan to find the square height of the third Pannel, and so on to the number of eight, as it appears in the Plan and Profile.

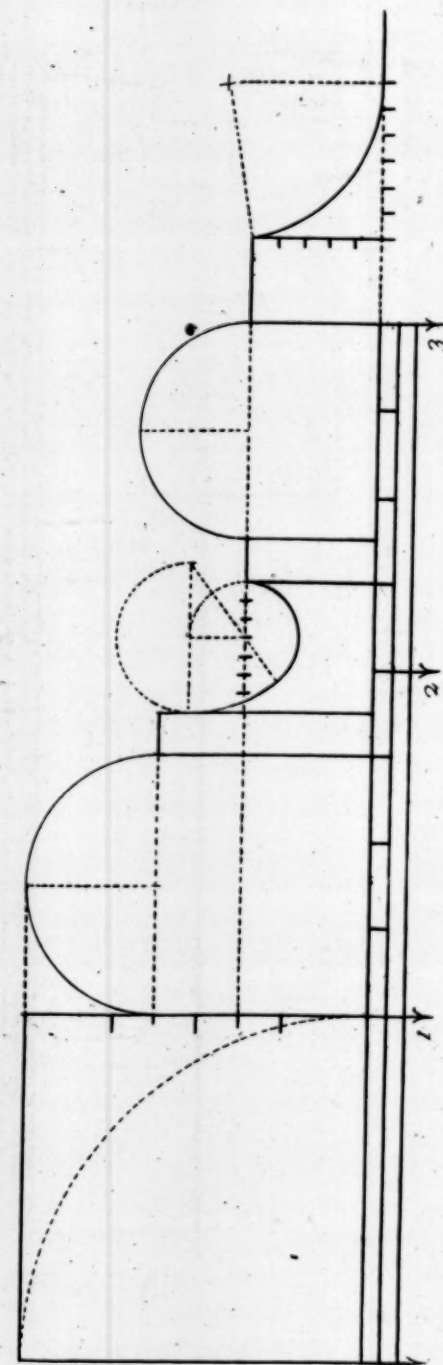
Fig. 3. The upright side of this Octagonal Cupola is made by the foregoing Geometrical Rule. First draw the Base-line *AB*, even with the Base-line of the Profile *AB*, on which erect the Perpendicular *DC*, for the middle of the side; then draw all the parallel lines from the Profile, as expressed by *GG*, &c. take half the length of each line, figured in the Plan, and mark it on each side of the middle line of *Fig. 3.* until

the

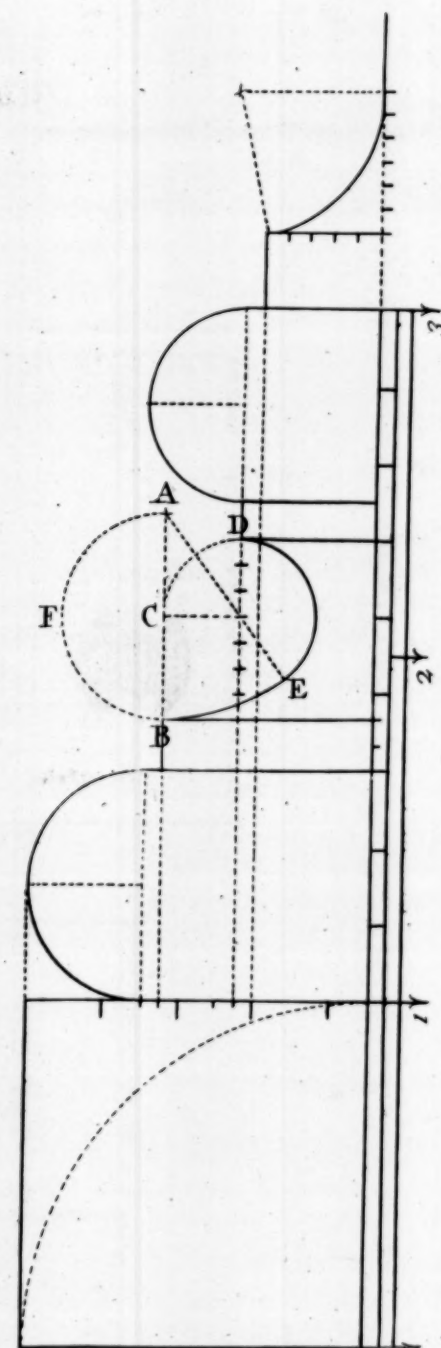




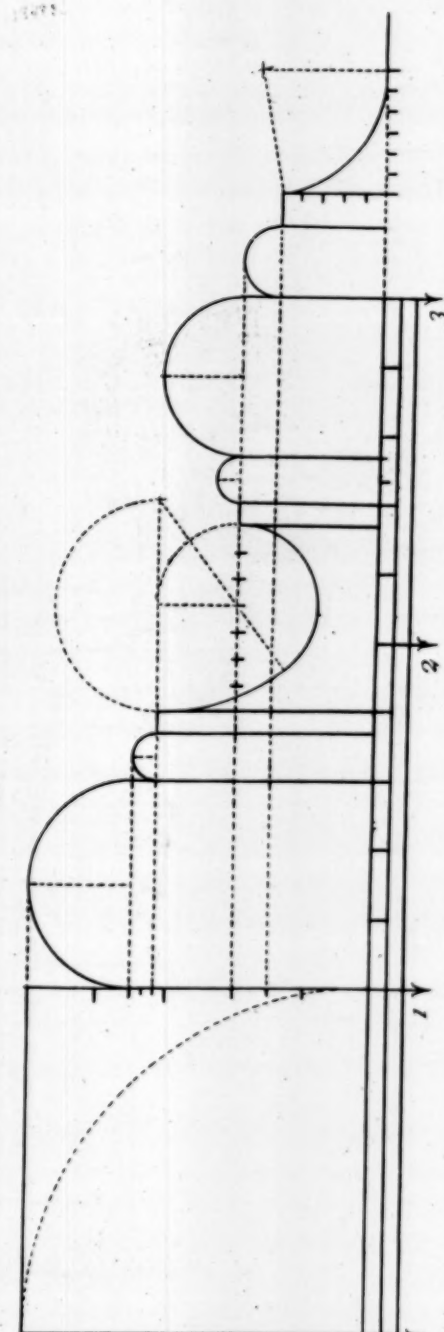
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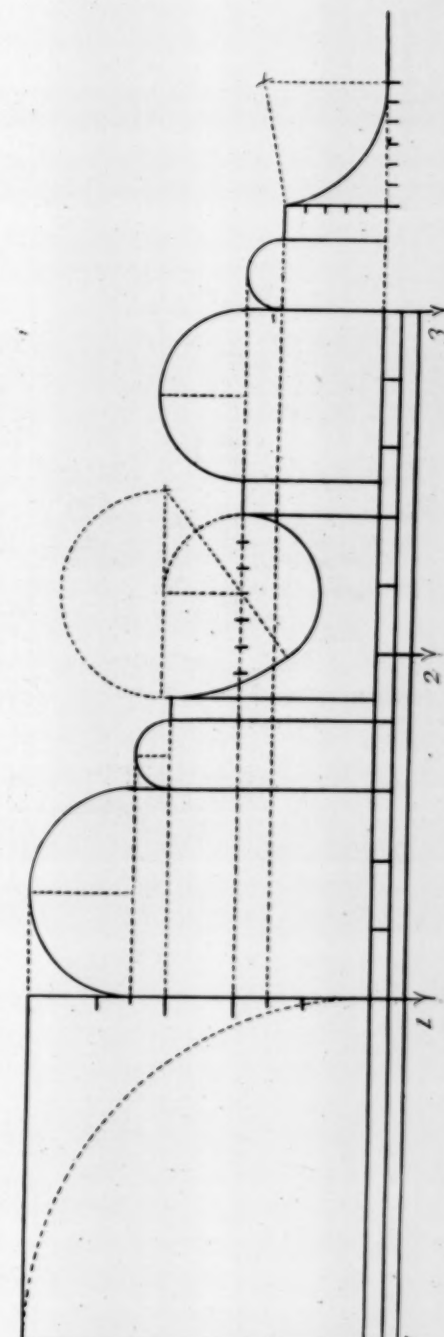
Doric



Ionic



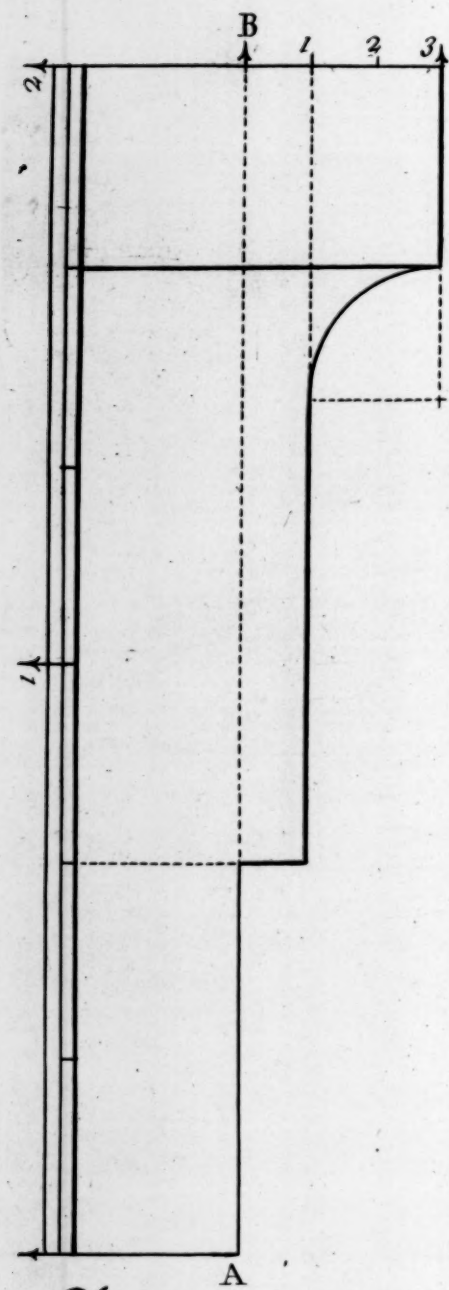
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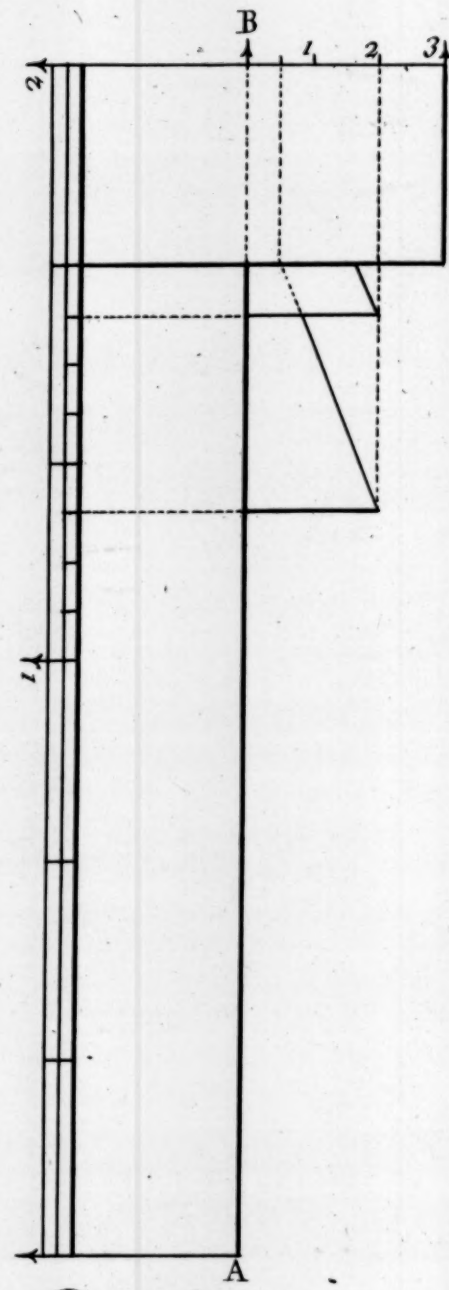
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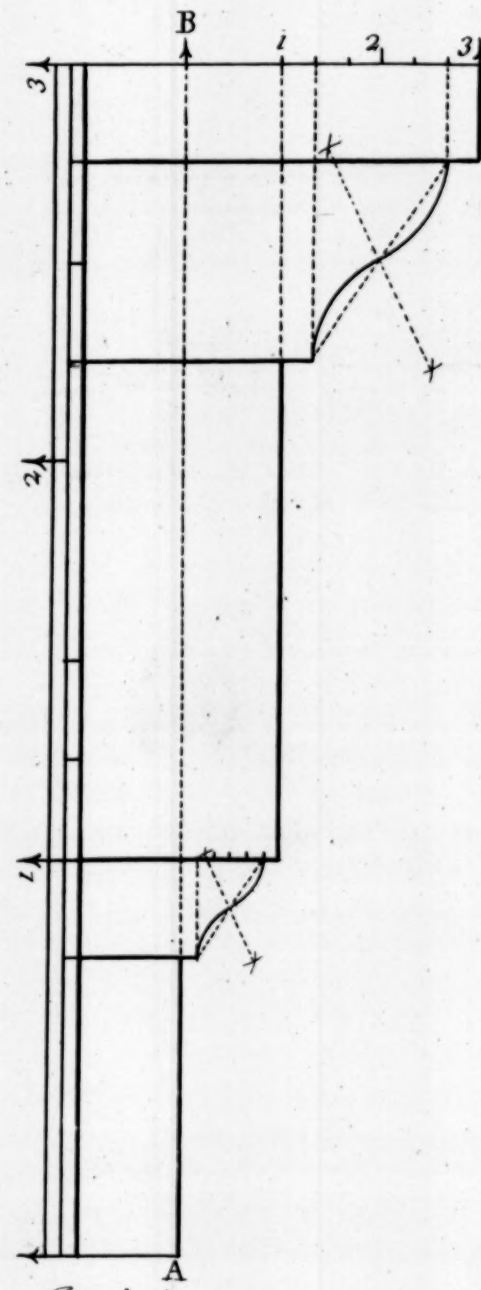




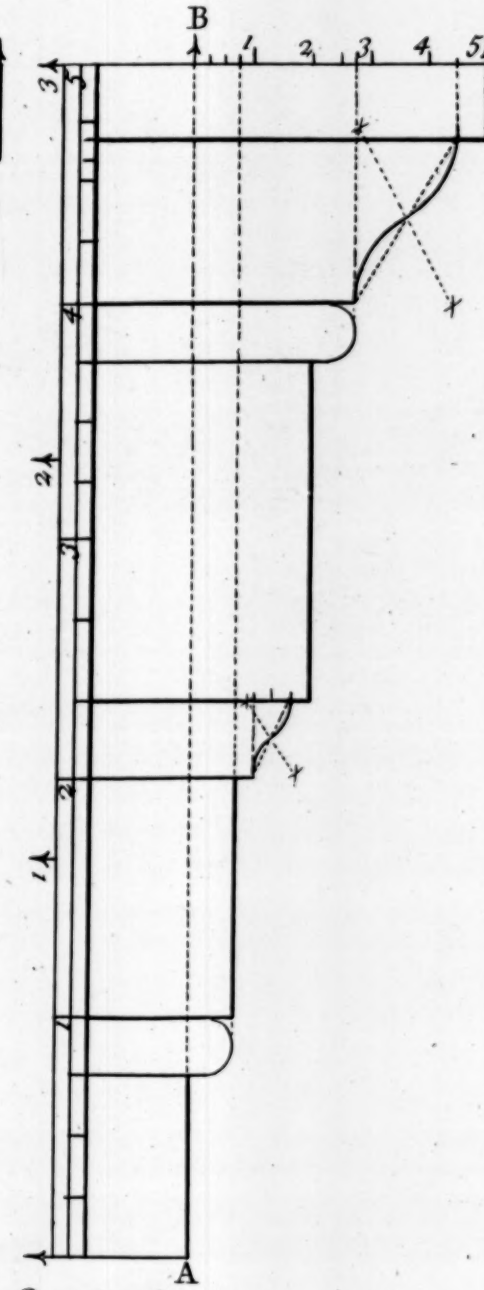
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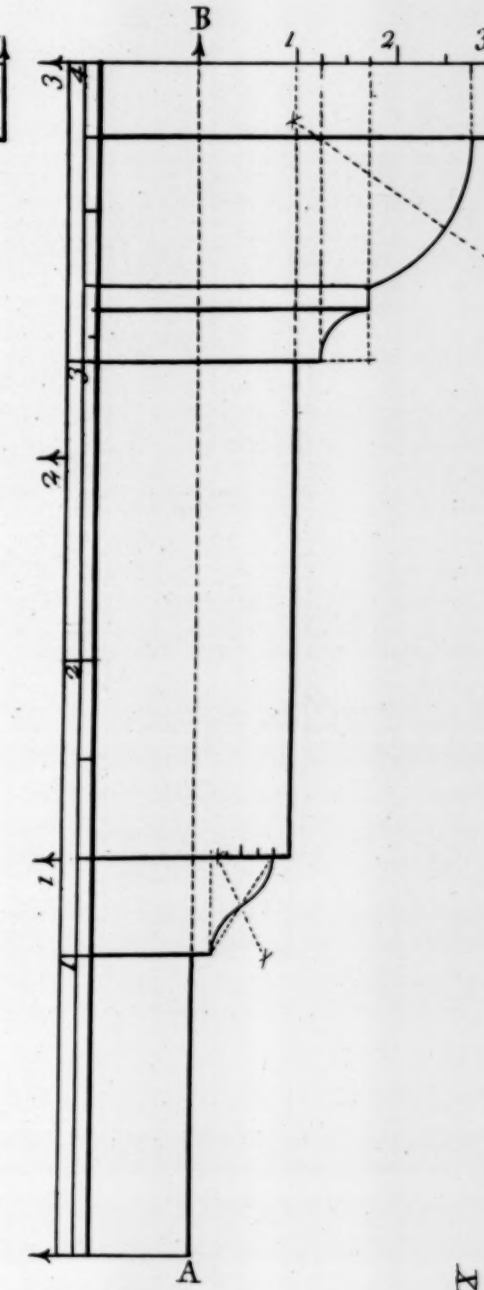
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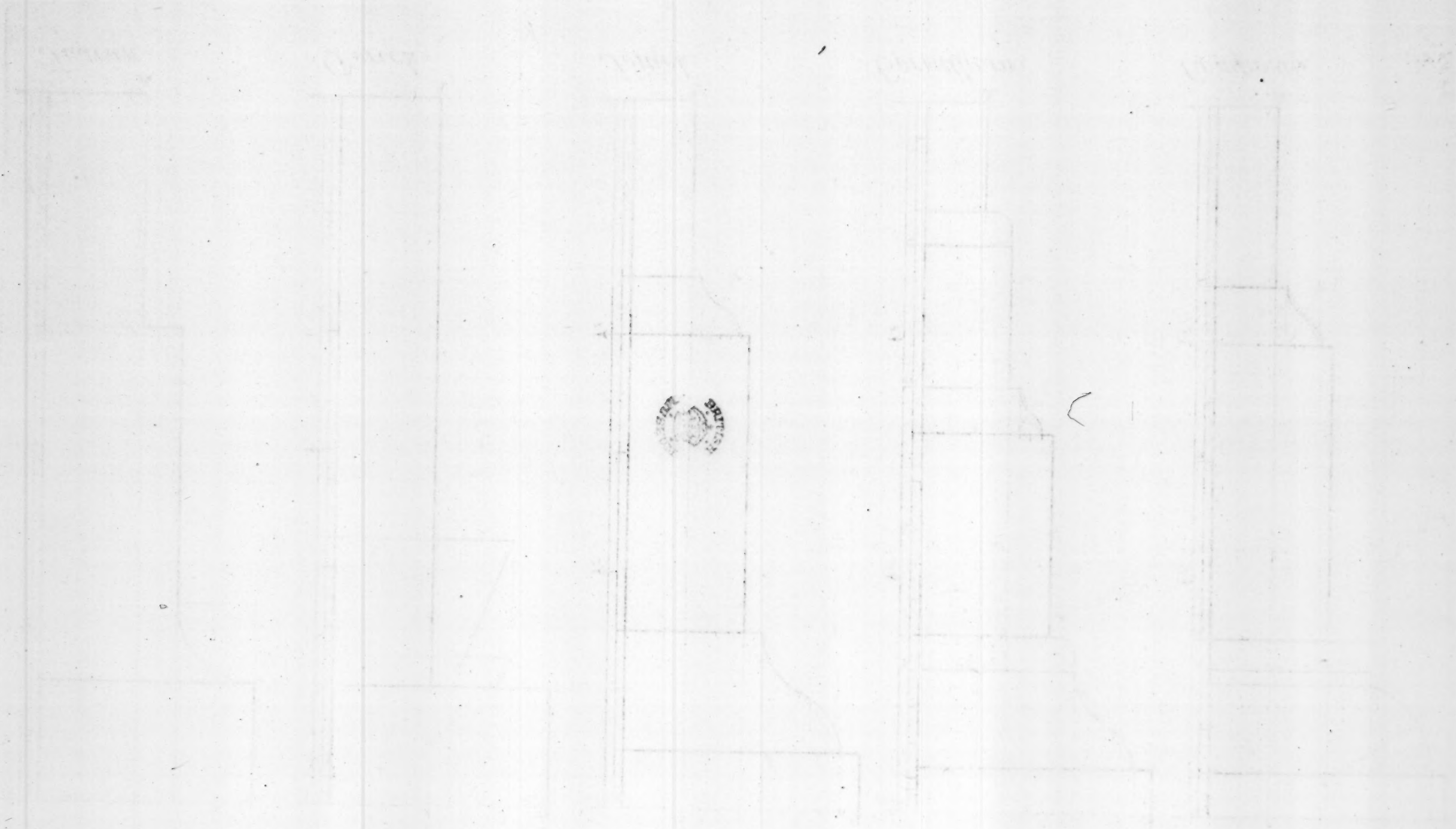
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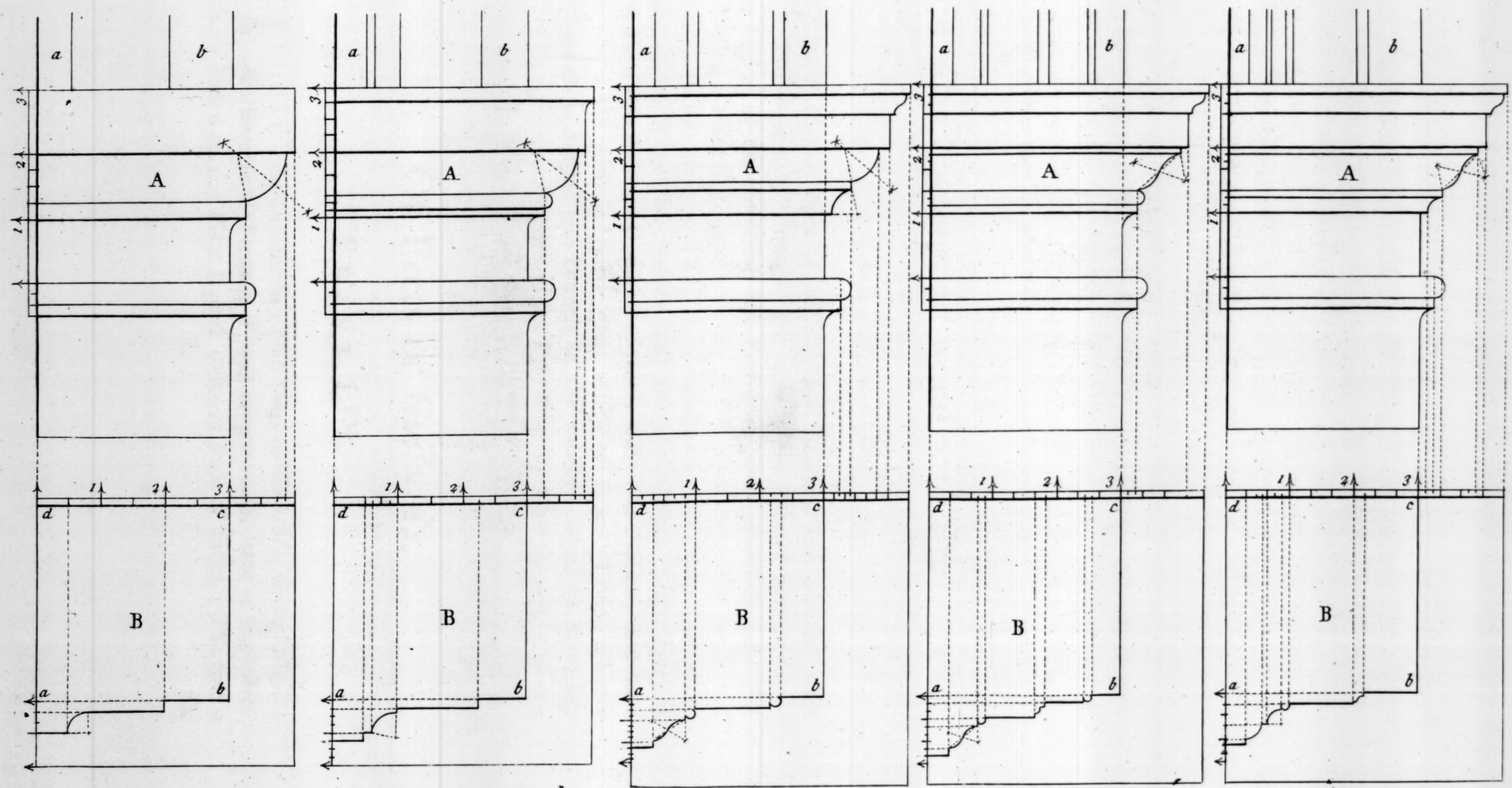


Corinthian



Composite





Tuscan

Doric

Ionic

Corinthian

Composite



the length of every Pannel is fixed; which afterwards must be followed with a line drawn by hand to compleat the form or out-line of the Pannels. In the same manner are the inner divisions brought over to the number of Pannels contained therein, as may appear by *Fig. 3*. The same Rule is to be observed in the other two sides *H* and *I*, adorned with Octagons and Hexagons.

As to the Sofites of Arches, if they are divided into Pannels, they must be of an uneven number, as in *K, L, M*, by having a Pannel in the middle. The Border must be no more than one fixth, nor less than one seventh part of the whole breadth.

The Quadrant or Profile *EF* (*Fig. 2.*) on which the Pannels of this Semicircular Sofite are divided, will be sufficient to explain them. I have drawn two Semicircular Sofites, *N* and *O*, of a larger breadth, to shew how they may be adorned.

Of Flat Cielings adorned with Fret-work.

PLATE LVIII.

FLAT Cielings may be divided into Pannels, and adorned with Fret-work and Painting. But it is to be observed that the lower the Cieling is, the Mouldings and Fret-work must project the less: For a Cieling 10 feet high must not have its Ornaments project as much as a Cieling 20 feet high; if it did, the Ornaments would appear a weight to the Cieling, so that their *relievo* must not be so great. I have given in this Plate two different Draughts of them, with their Profiles; and there may be made with judgment great variety of them. I think it better to have them divided into Pannels in this manner, which by its variety gives an agreeable diversion to the Eye, than to have the whole in one large Pannel, which would make it appear too heavy.

Of Frets or *Guilochis*.

PLATE LIX.

THESE little Ornaments called Frets or *Guilochis*, wrought in the flat Borders of Frames, if well proportioned, have a fine effect. I have drawn on this Plate several different sorts of them. The first is

L

the

the *Virruvian* Scroll, drawn either plain, or adorned with Leaves and Sprigs. The second is a Fret resembling a Knot. The third is a different Knot. The fourth is a Fret-border of eleven divisions done two ways, the distances of the sinking and rising parts being equal. The fifth is a Border of two different Frets of nine divisions. The sixth is a Border of two different Frets of seven divisions. These Ornaments are proper to be placed in Picture-frames, Sofites of Arches and Architraves, on *Fasciæ*s and Plinths of Bases, when the rest of the members are carved.

Of Block-Cornices and Rustick Coines.

PLATE LX.

YOU have here three different sorts of Block-Cornices; their divisions are marked on the left hand. But to make them more plain, I have drawn the Profiles of them larger on the next Plate. As to the Rustick Coines, they have a proportion to each other as 2 to 3, and their champhered Edges, or Rusticks, are $\frac{1}{4}$ of their height.

The Profiles of Block-Cornices.

PLATE LXI.

THESSE Profiles are each of them divided into eight parts, which are subdivided to form their members. They do not project so much as they are in height, as other Cornices. The projection of the *Cima* a-top must be reduced to a Square; and so must the little Lift under it, as appears on the Plates. The *Corona* falls upon the fourth division of the Scale below for the projection in two of those Profiles; but in the third the *Corona* falls on the fifth division. The rest is very easy.

Of Ballusters, their Proportions and Distances.

PLATE LXII.

I Have given on this Plate five different sorts of Ballusters. The lowermost is divided into eight parts, and its breadth into four, two of which go to the solid, and two to the swell'd Members. The Ballusters are distant from each other one half of their thickness. The cross prick'd lines shew the centers of the swelling and sinking members. The Ballustrade next above this on the left hand is divided into nine parts, and that on the right into ten, and subdivided as on the Plate. The uppermost Ballustrades are of a more delicate form, being divided into twelve parts, and subdivided to form the Mouldings. These are fittest to be done in Wood or cast in Metal; the others may be made of Stone. Their Caps and Bases have the same proportions with the common Pedestals.

Of Balconies and their Trusses.

PLATE LXIII.

I Have drawn here four different sorts of Balconies, where the foregoing Ballusters may be used from the largest to the smallest. I have also given their Profiles, shewing eight different sorts of Trusses that support them. Some are drawn with Architraves, Friezes and Cornices; some with Pannels enriched between the Trusses, others with Heads, Shields and Festoons, &c.

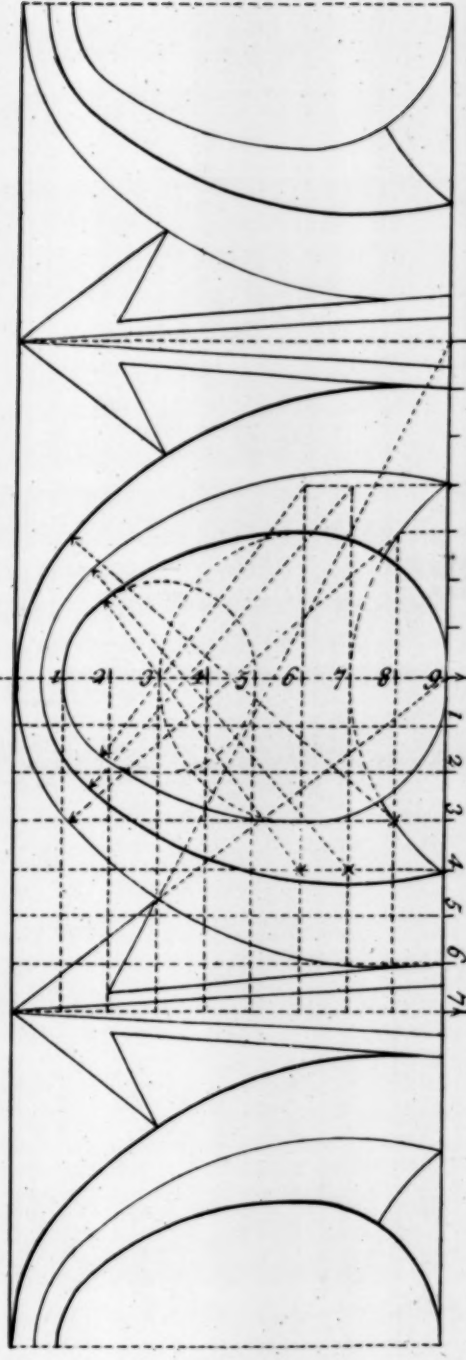
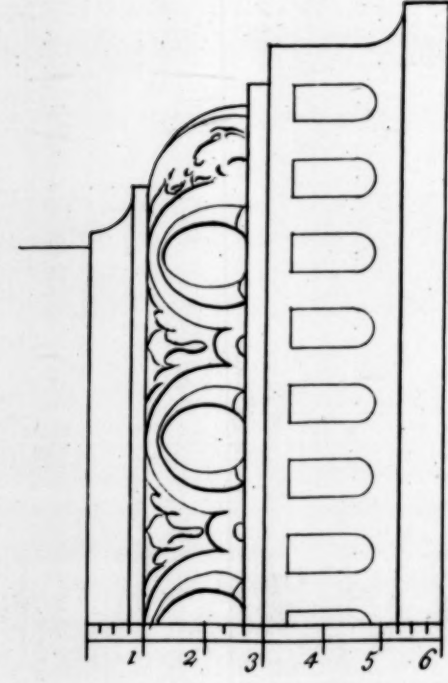
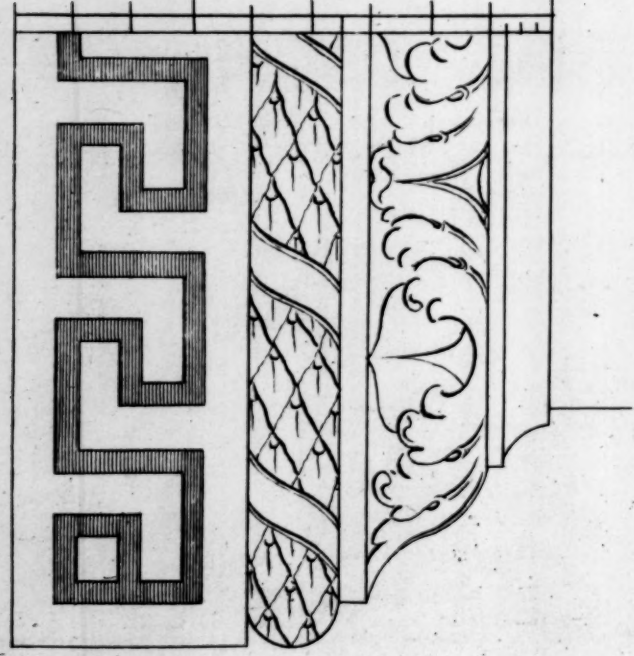
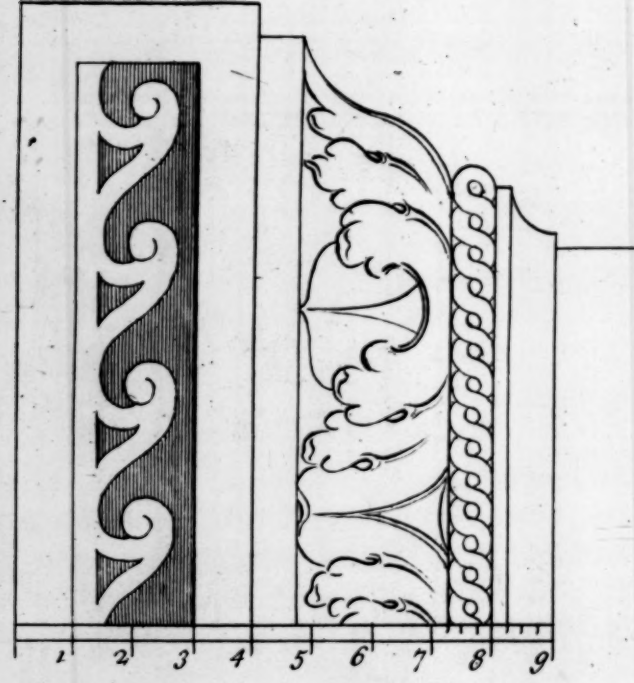
The CORINTHIAN Modillion explained.

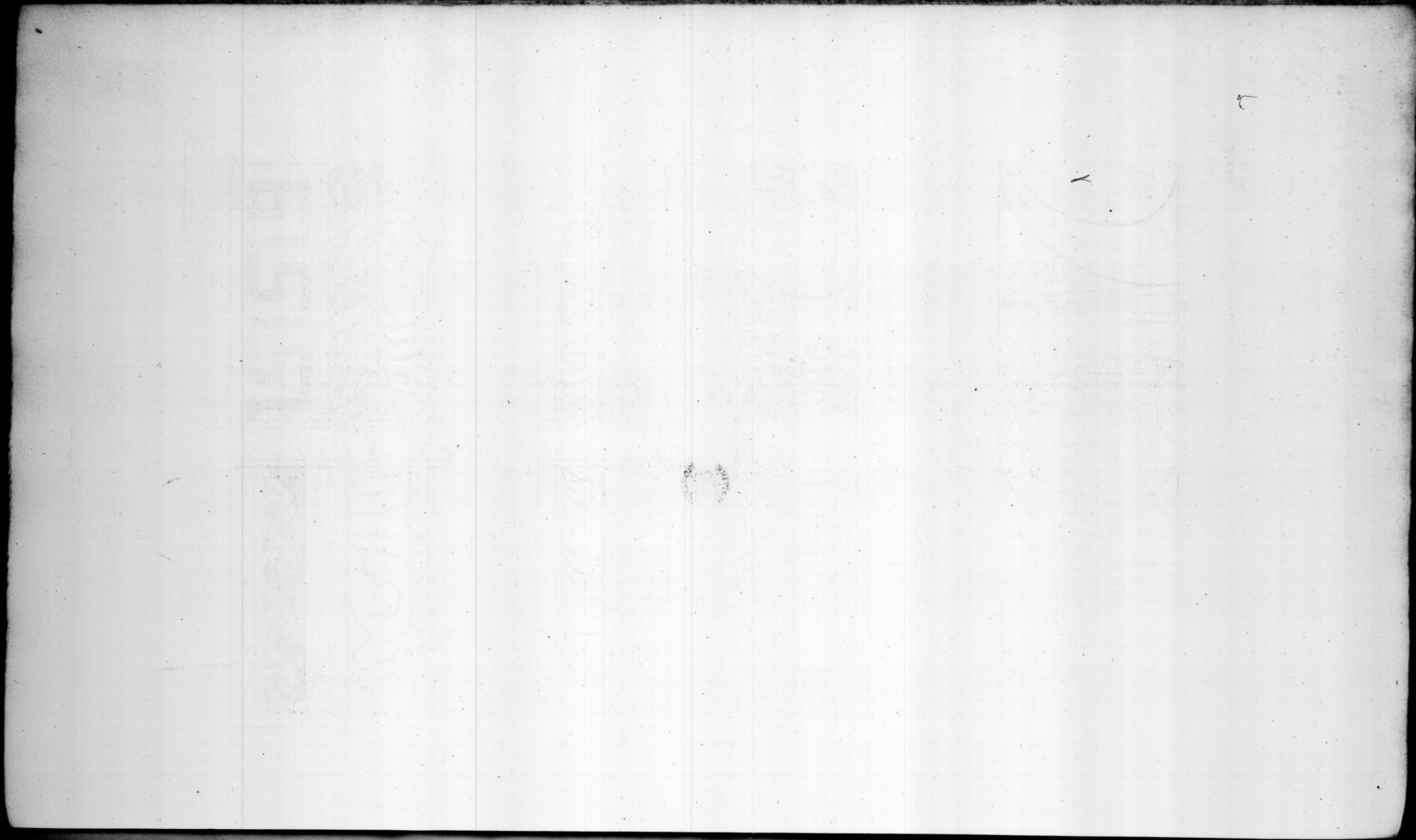
PLATE LXIV.

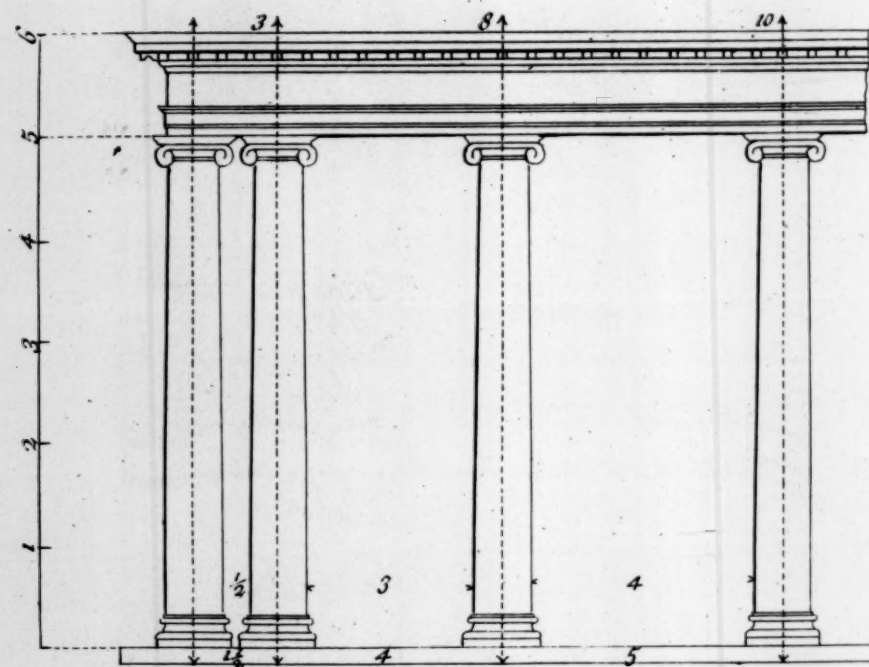
THE real bigness of a Modillion in respect to its Cornice is shewn in the Profile and Platform of the *Corinthian* Entablature, Plate XVII; and in the Cornice at large, Plate XVIII. On this Plate are
drawn

drawn at large three Views of this Modillion; the Profile *A*, the underside *B*, and the end *C*. The Profile hath the form of a Scroll, and both ends are turned with a Spiral. The height of the biggest is divided into eight Parts; the fifth gives the bigness of the Eye, the breadth is seven, and the fourth gives the Center. The lesser Spiral is four sevenths of the bigger; divide each of the four parts into two, which make eight; the breadth is seven, and the Eye one, by the same Rule as the former. The Eye is divided into eight different Centers, according to the number of Quadrants which form the Spiral line, explain'd by prick'd lines drawn from each Center, and marked 1, 2, 3, &c. Both Spirals are joined by two Segments; the Center of that which joins to the biggest at *a* falls perpendicular upon the first Center of the Spiral, and is one fourth part of its height above it. The second at *b* is perpendicular to the inside of the Rose, and one fourth of the lesser Spiral below the Base-line of the Modillion; this fourth is divided into three, to shorten the perpendicular line by two parts, for the Center of the diminished part *C*; the joining of these Segments is where the prick'd line drawn from *a* to *b*, being the Centers, do cut the Segments *aa*, *bb*, *cc*. The end of the Scroll *C* is to be divided into eight parts; one eighth is the bigness of each Fillet *d*, *d*, and so is the Bead *e* with its Lifts, and each Lift is one sixth of the Bead and Lifts; the sinking of the Lifts or Center of the Bead is three quarters.

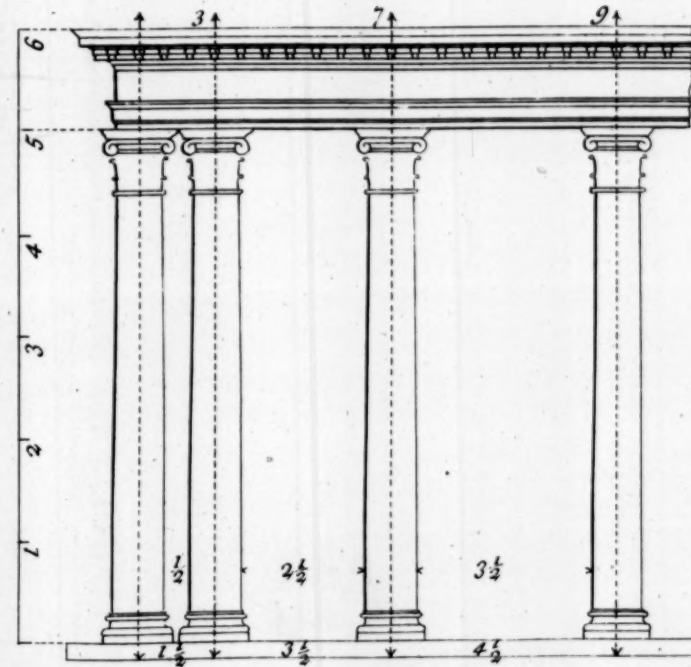
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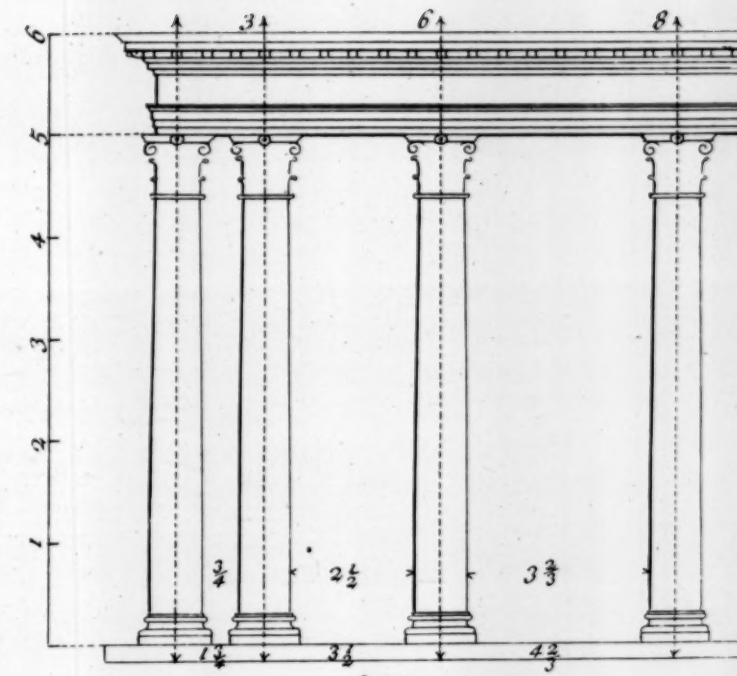




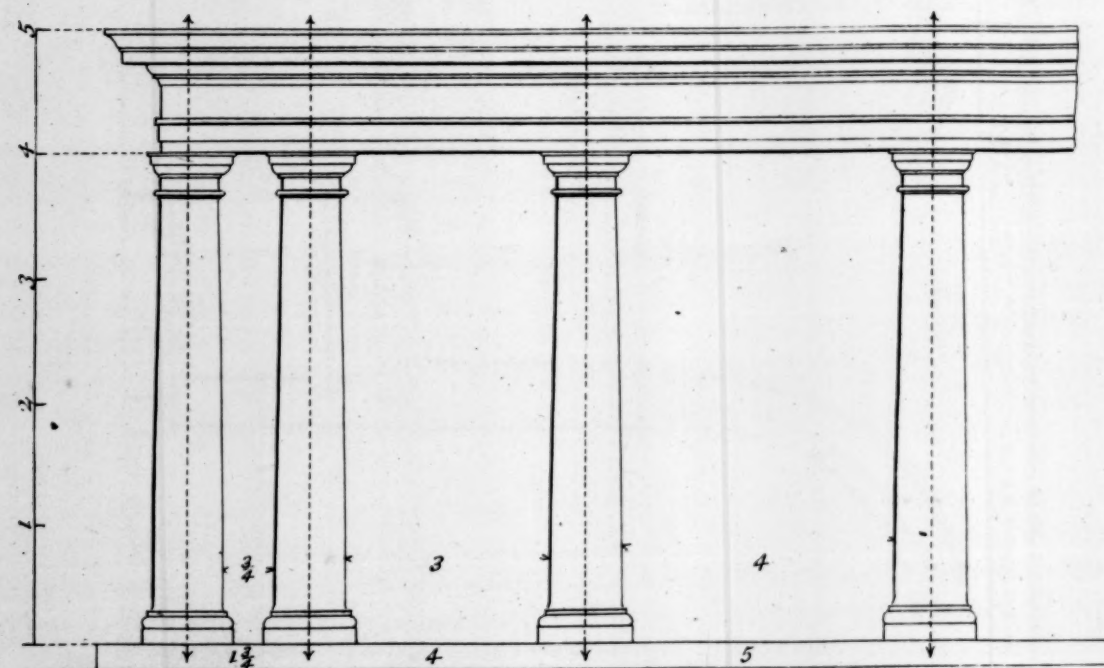
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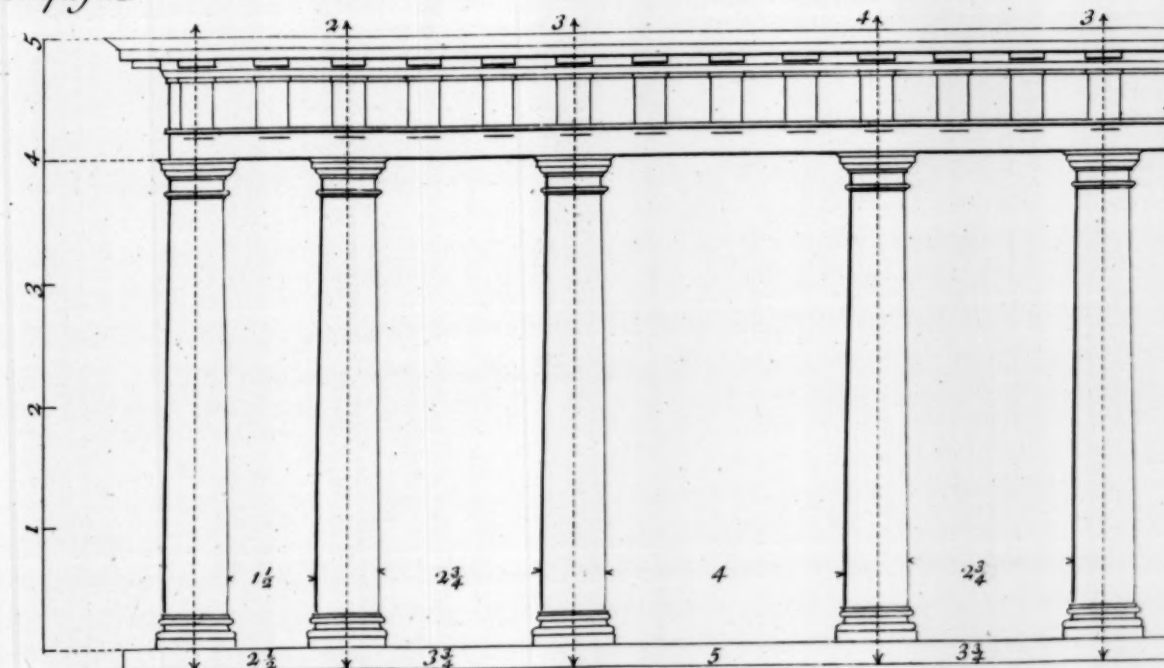
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Corinthian

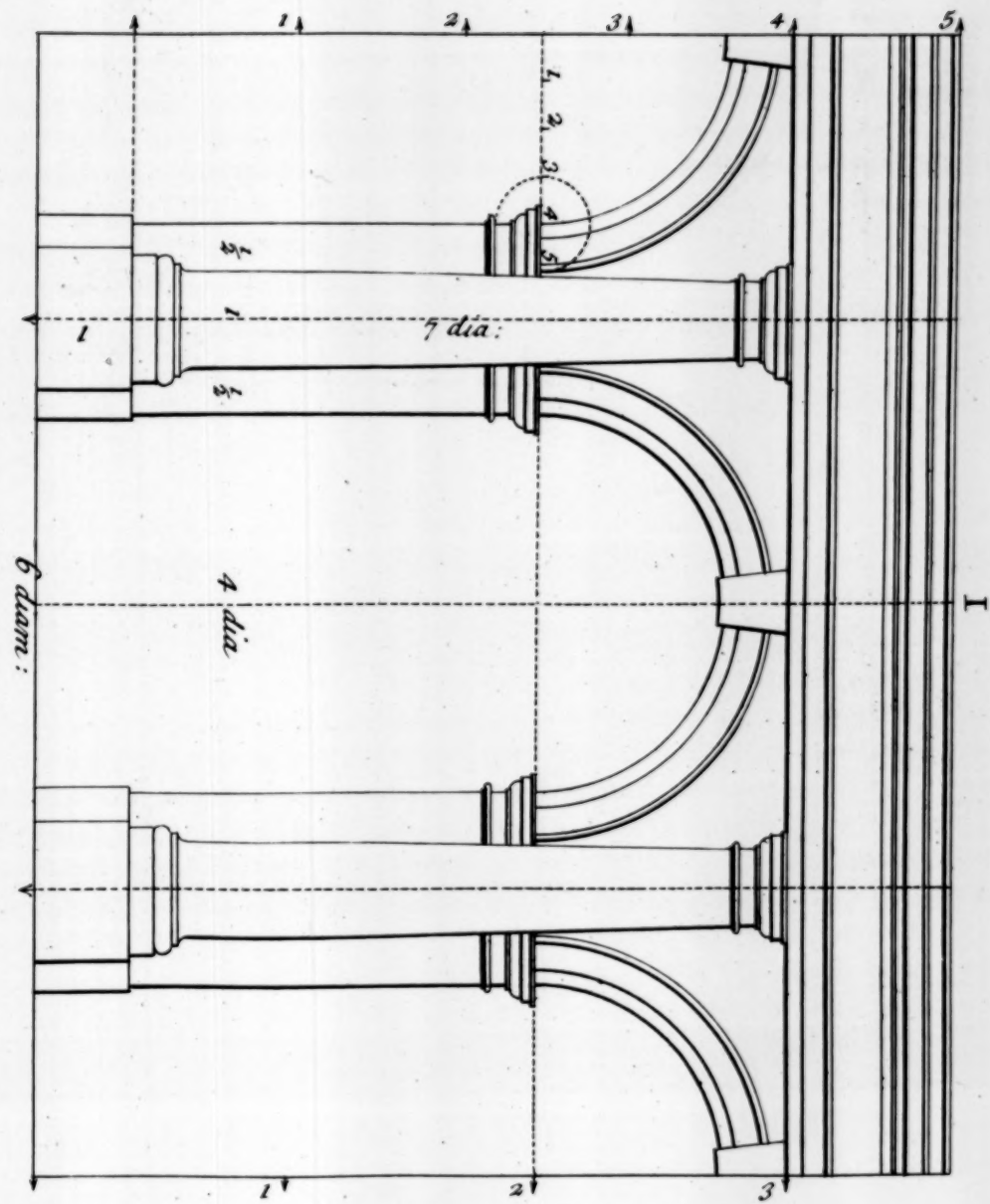


Tuscan

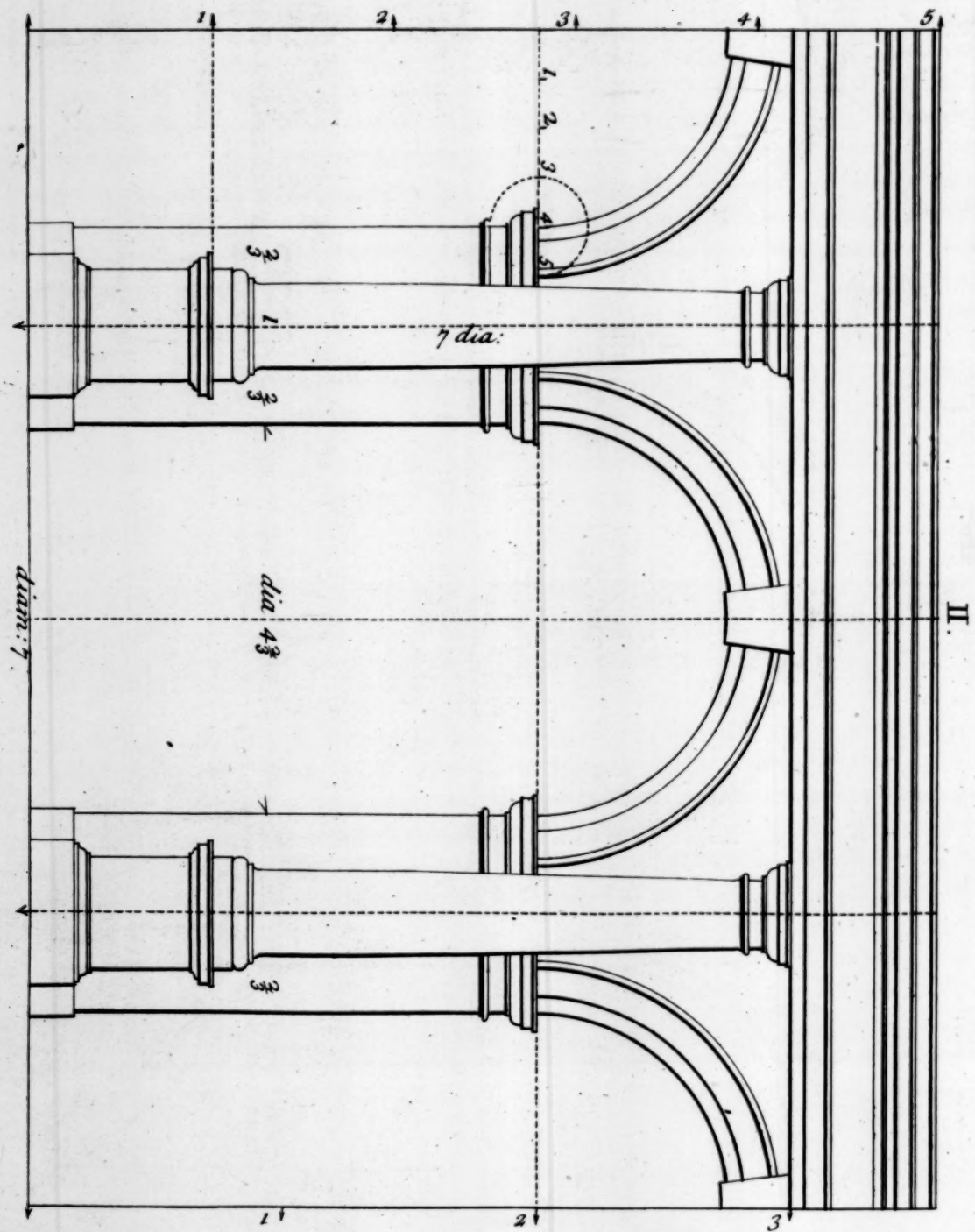


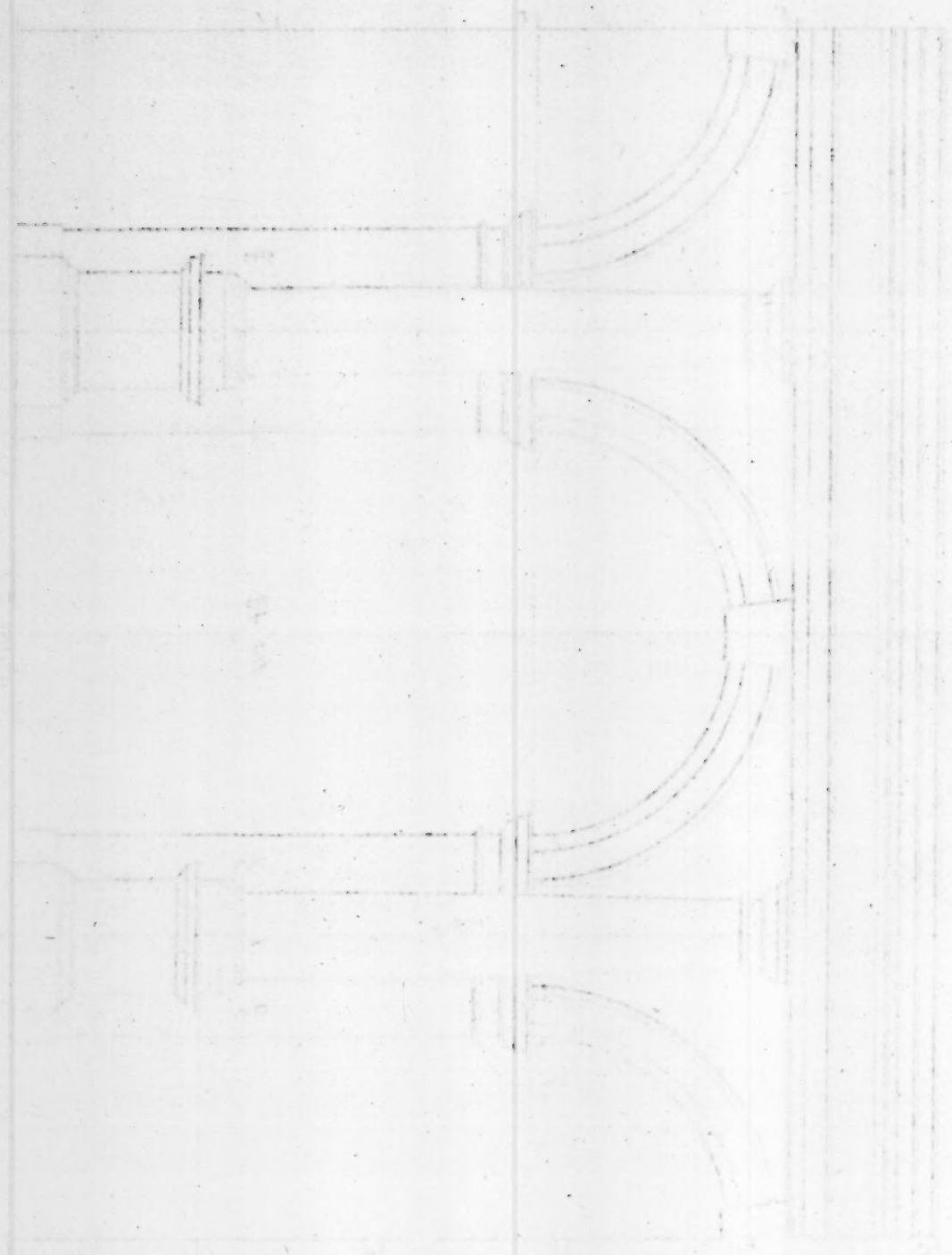
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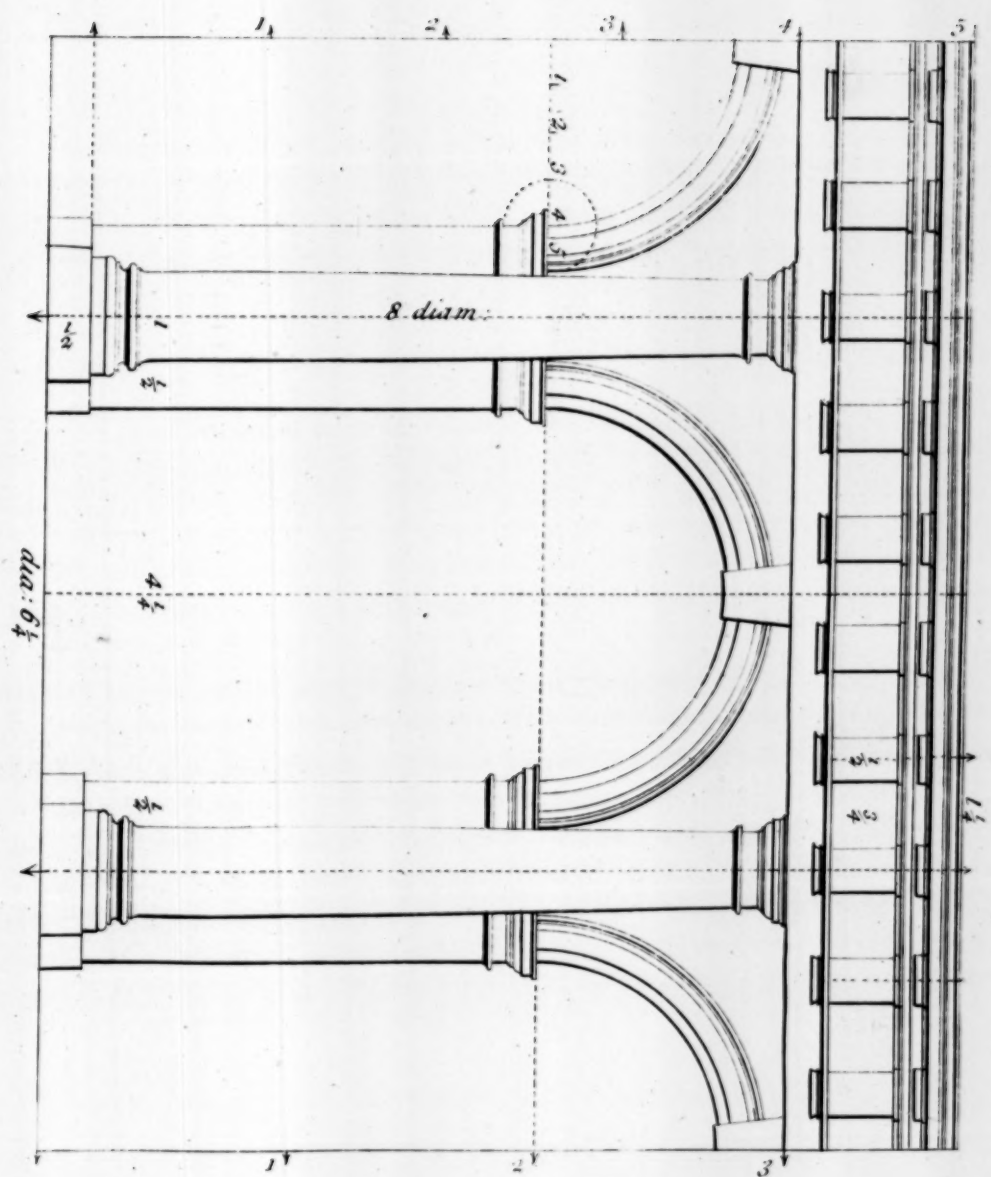
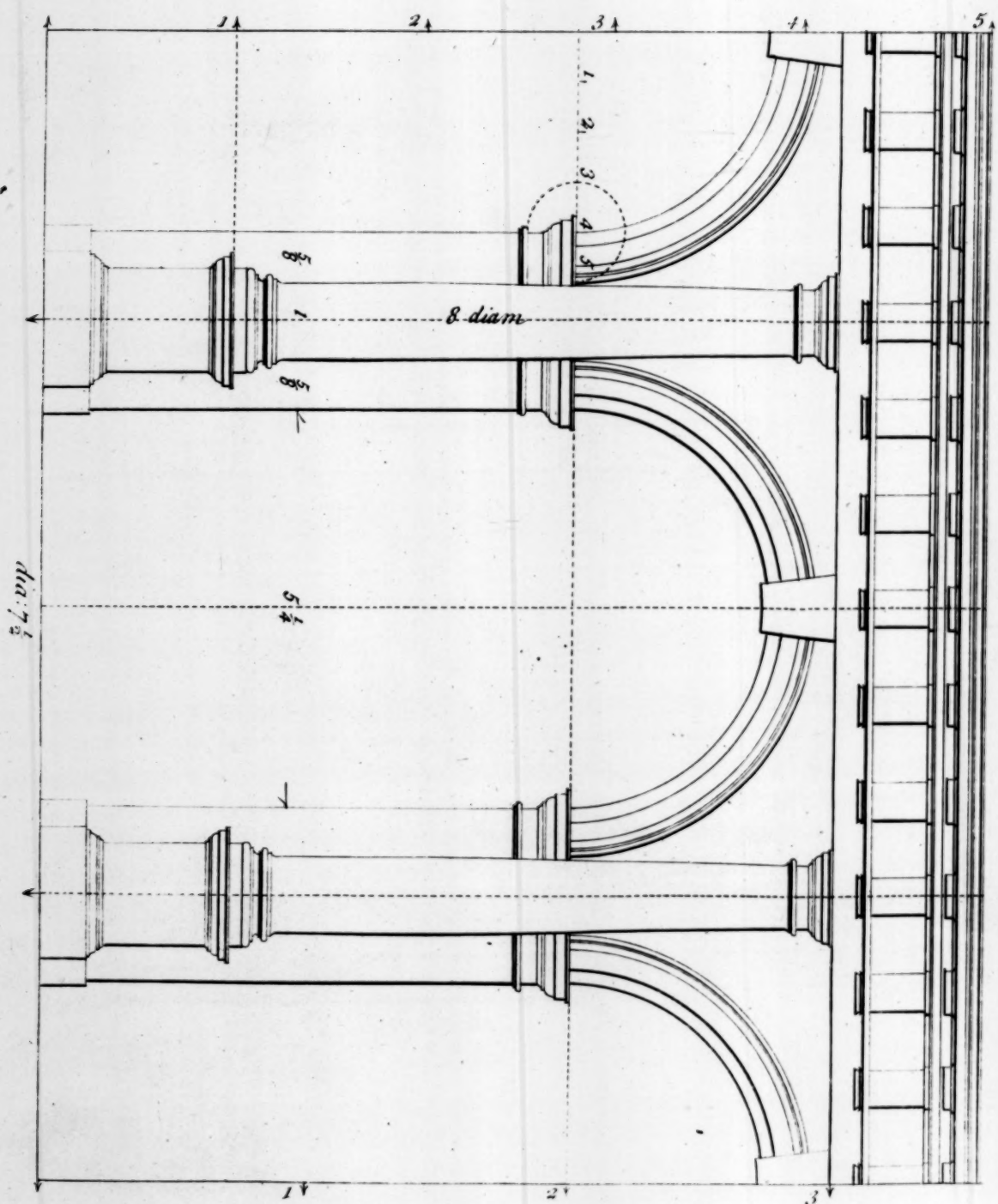


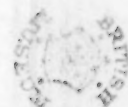


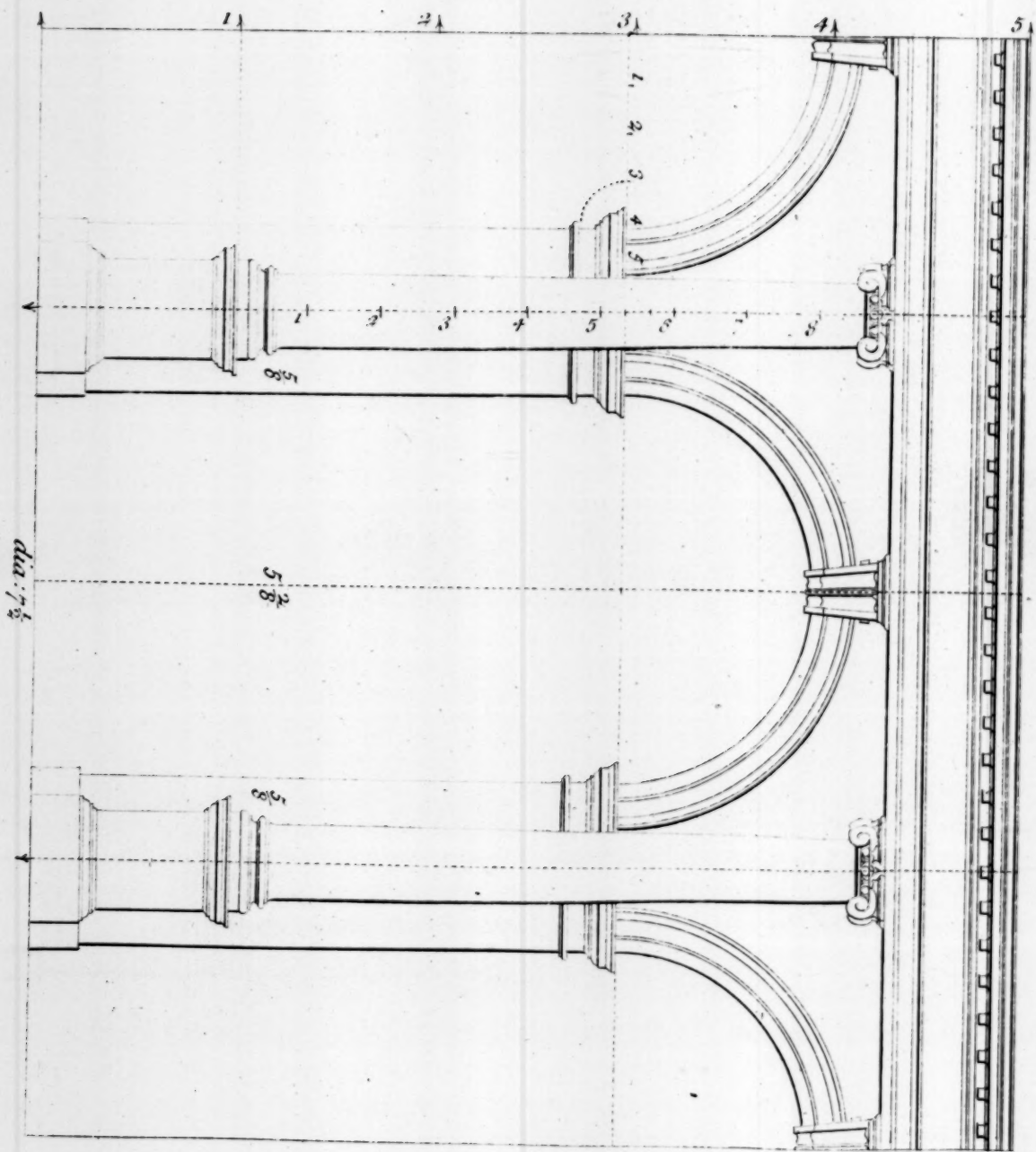
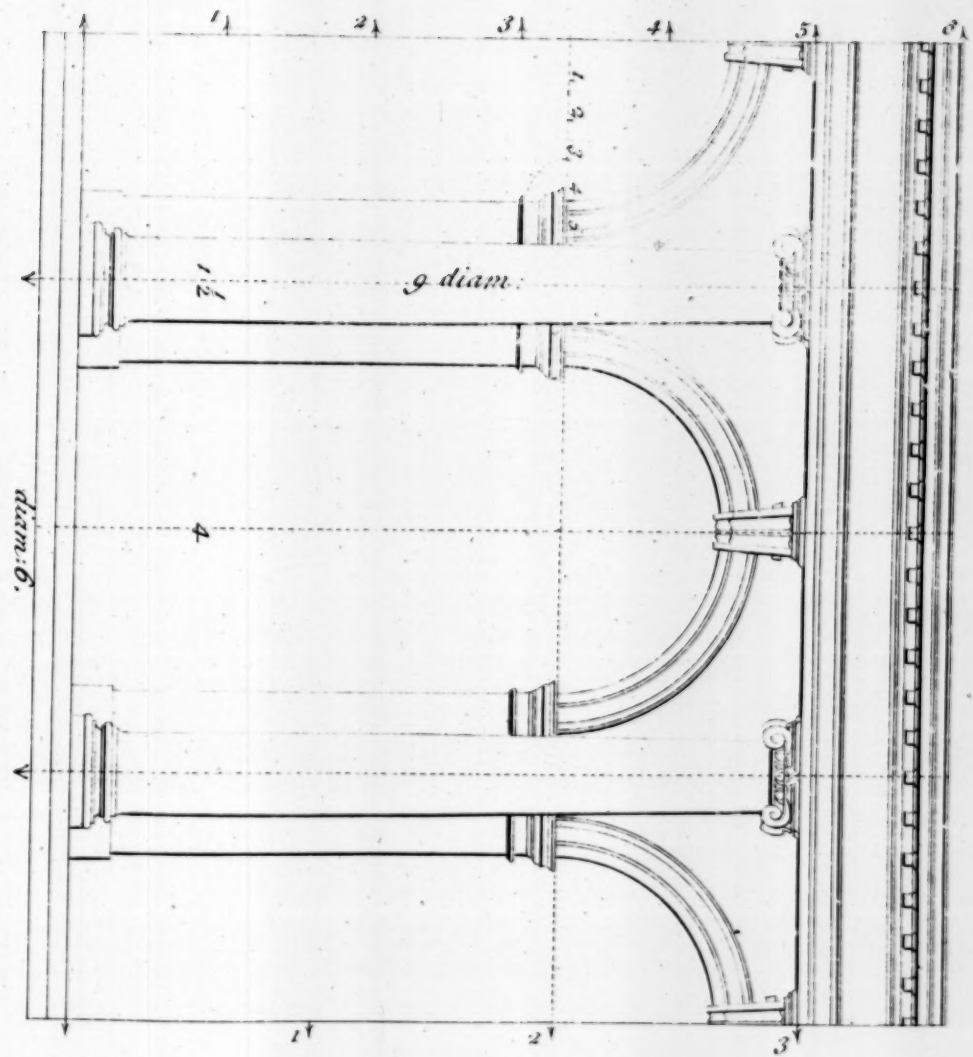
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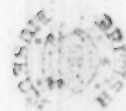


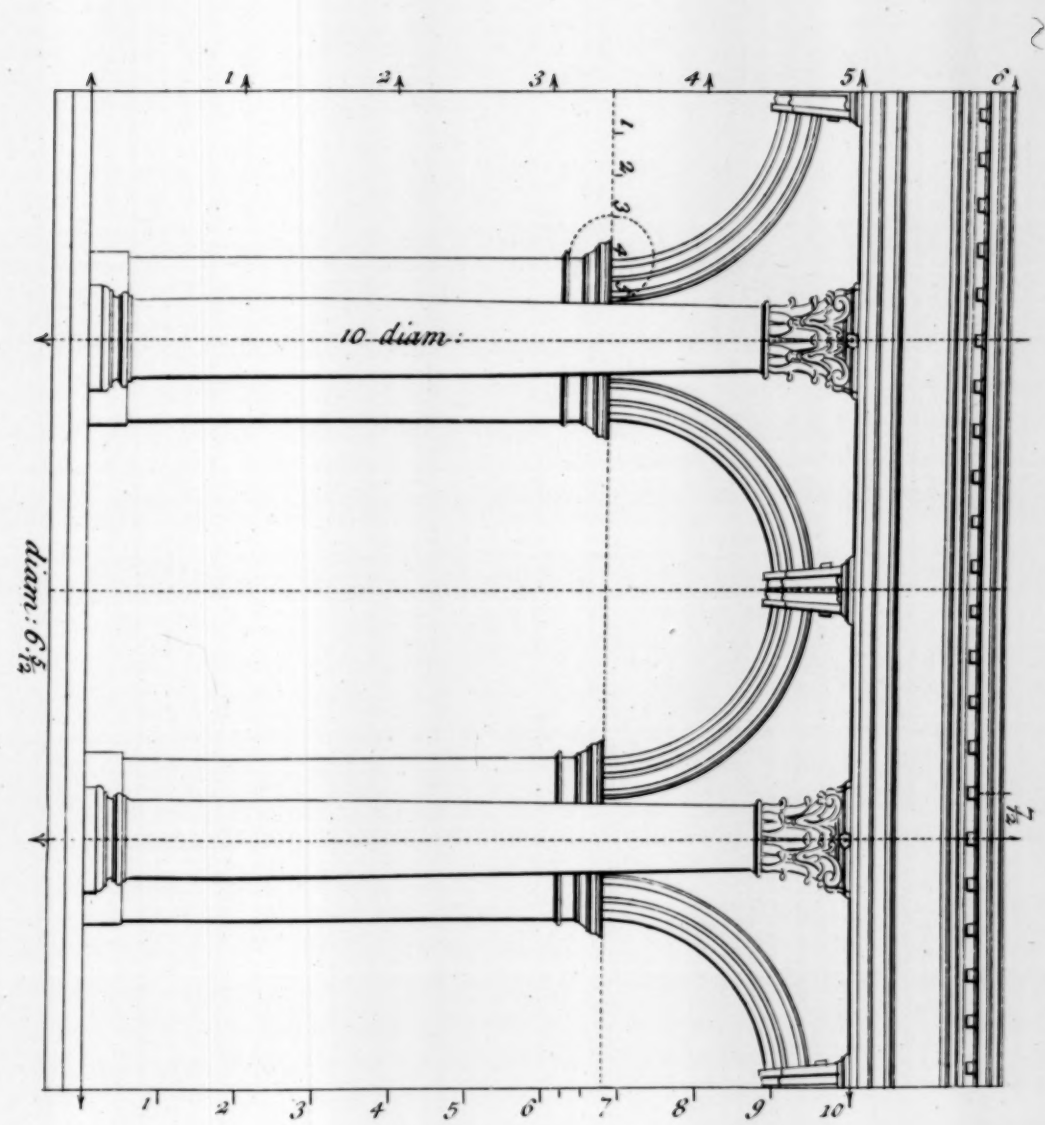
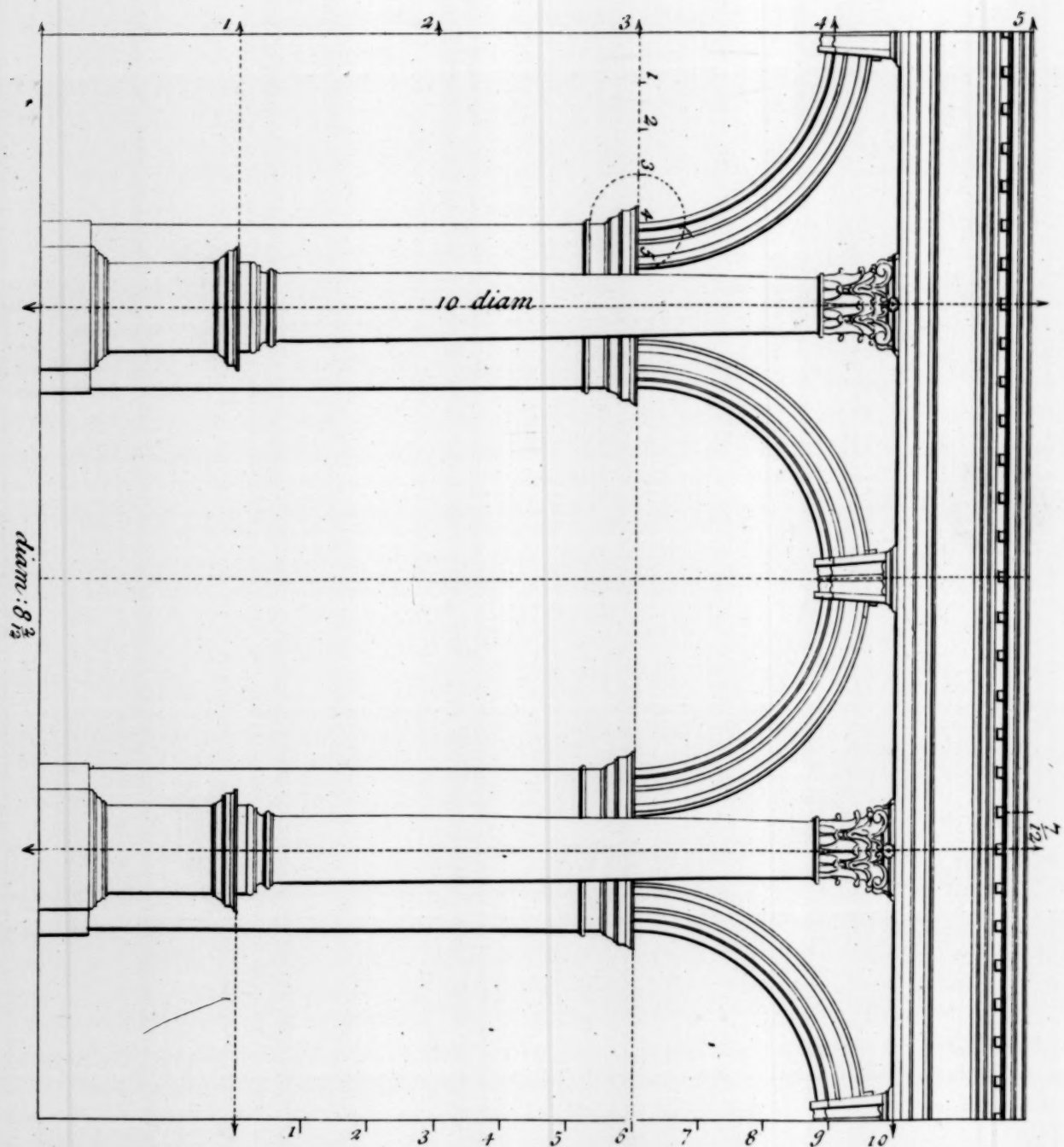


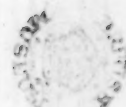


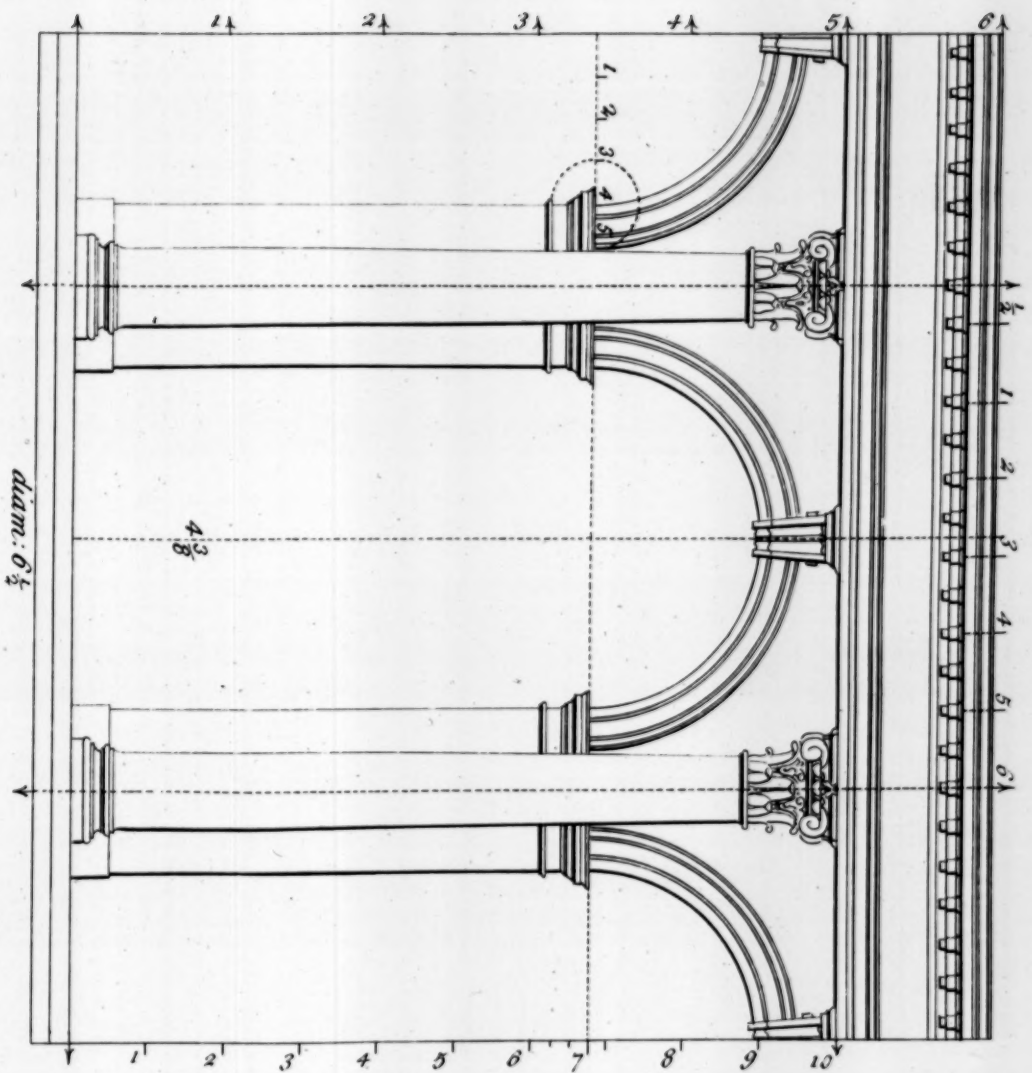




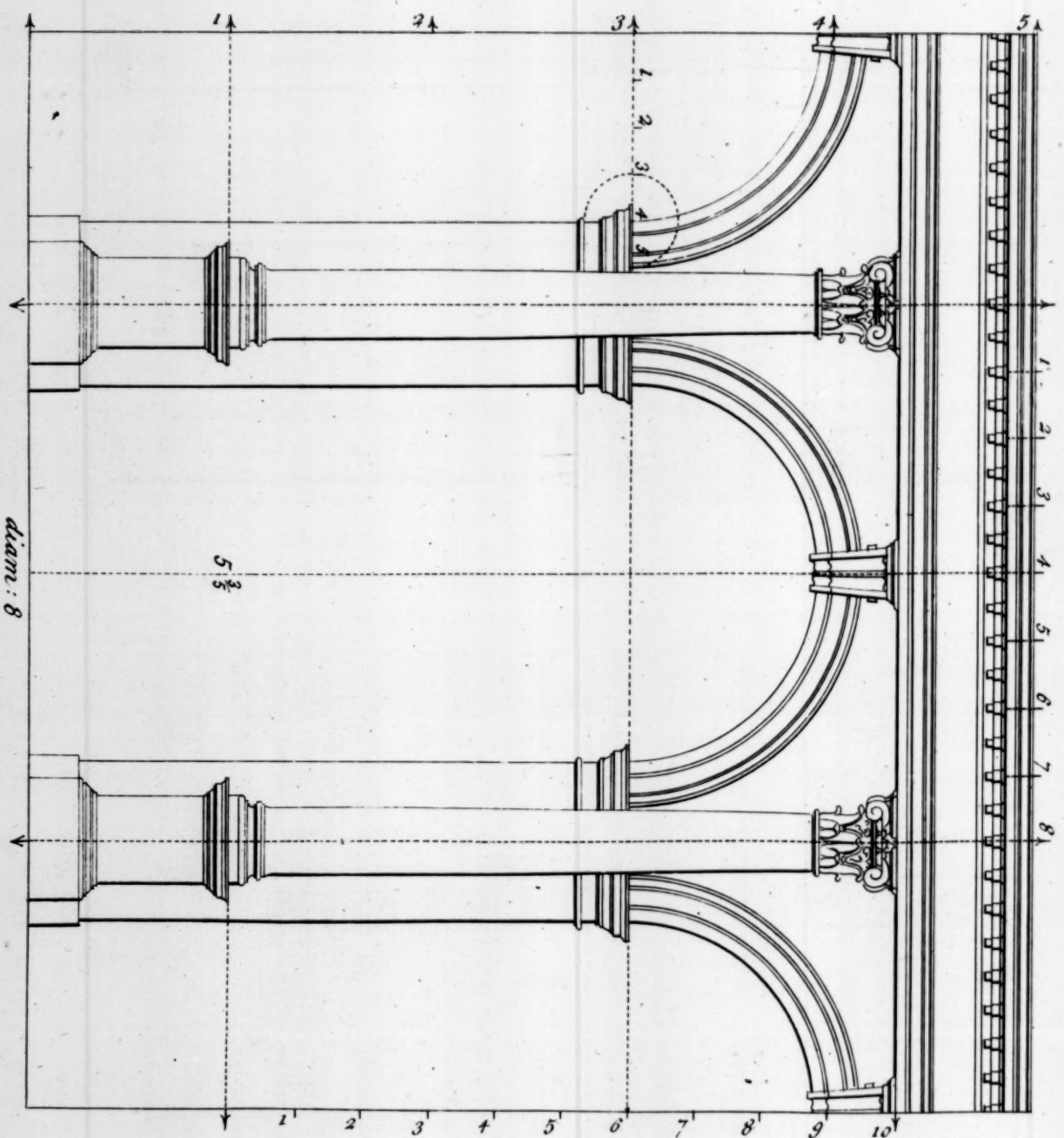


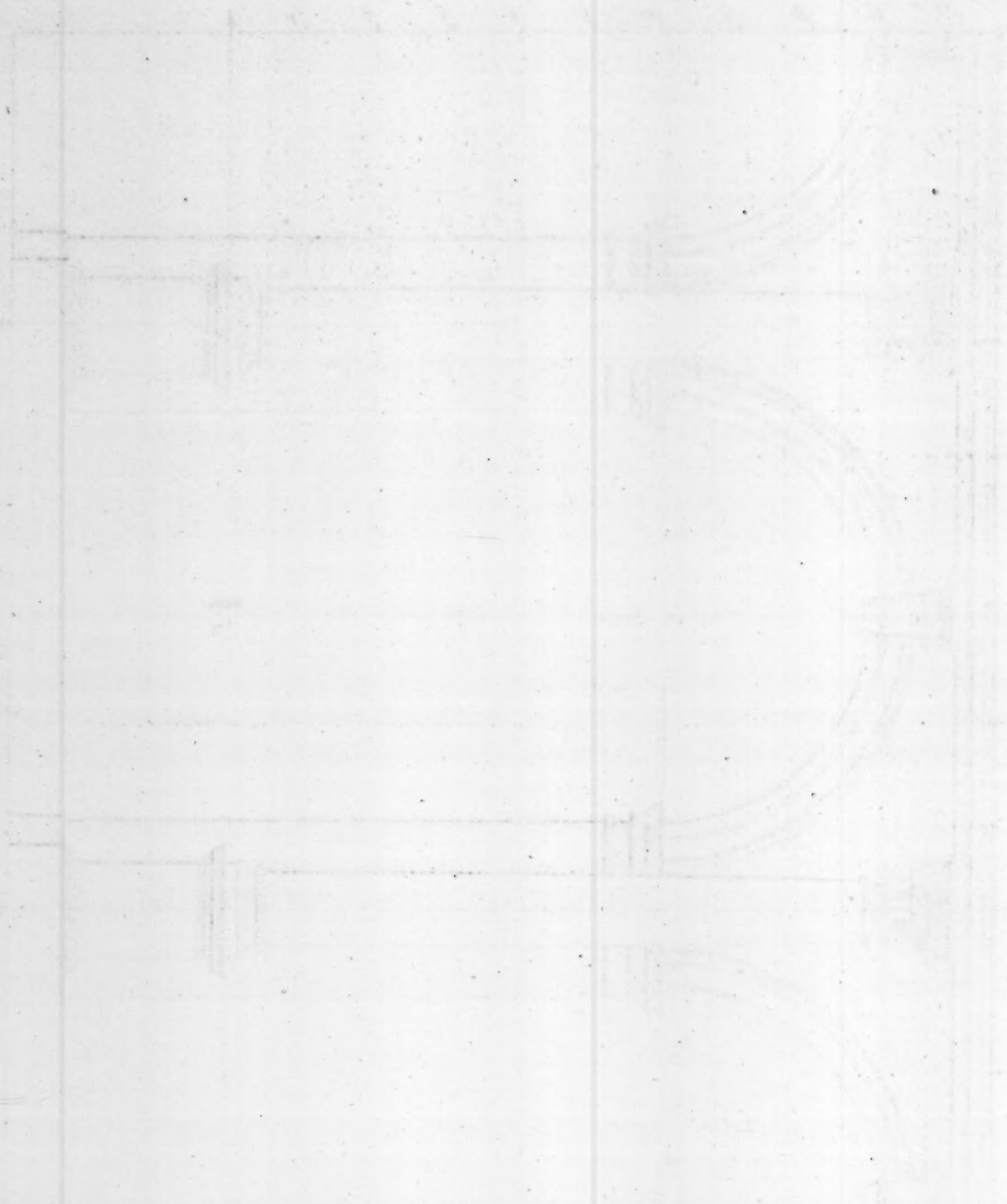


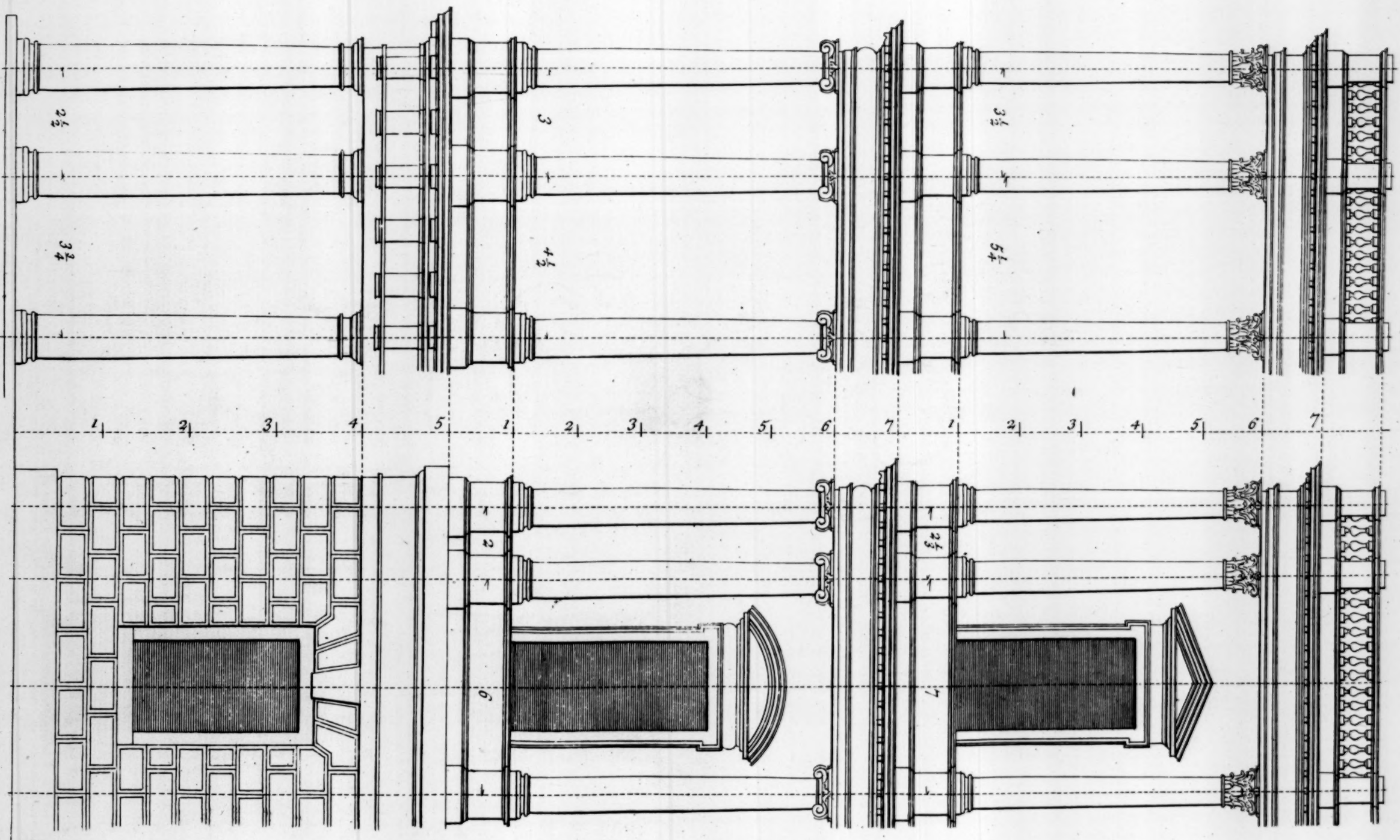


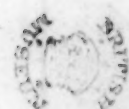


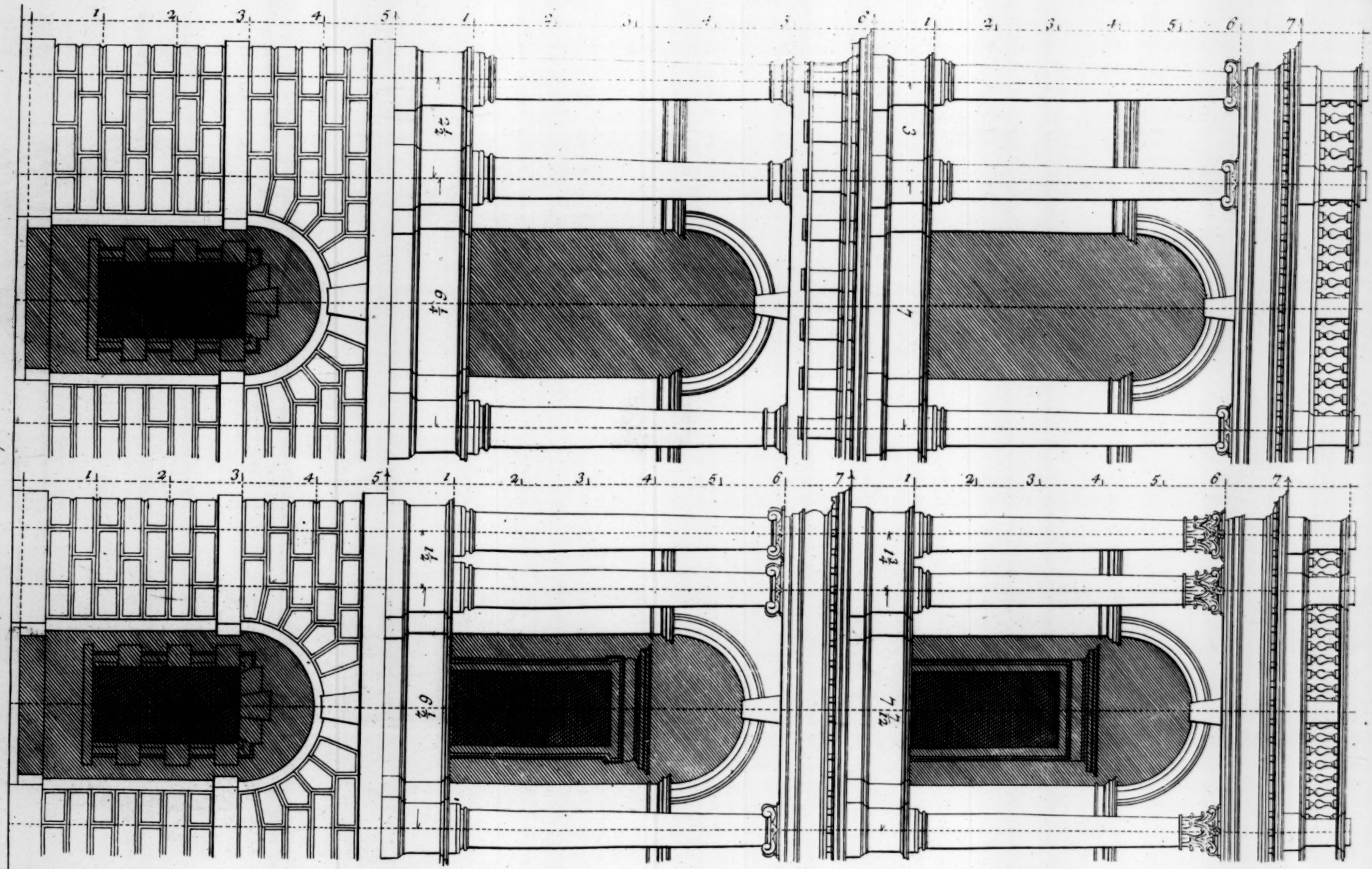
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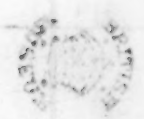
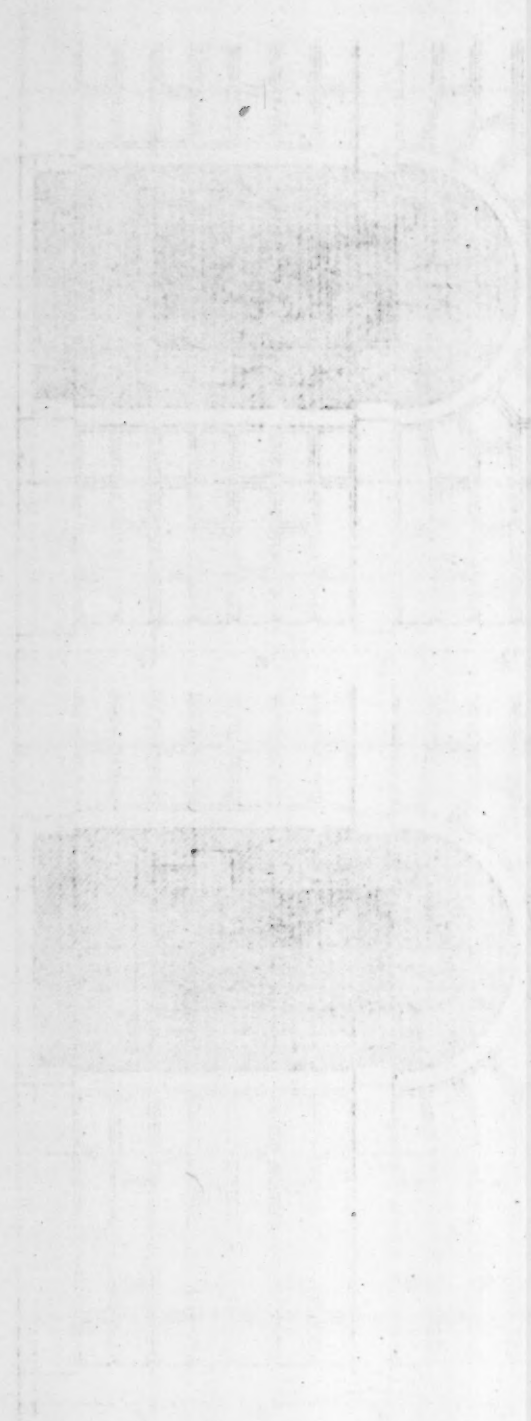




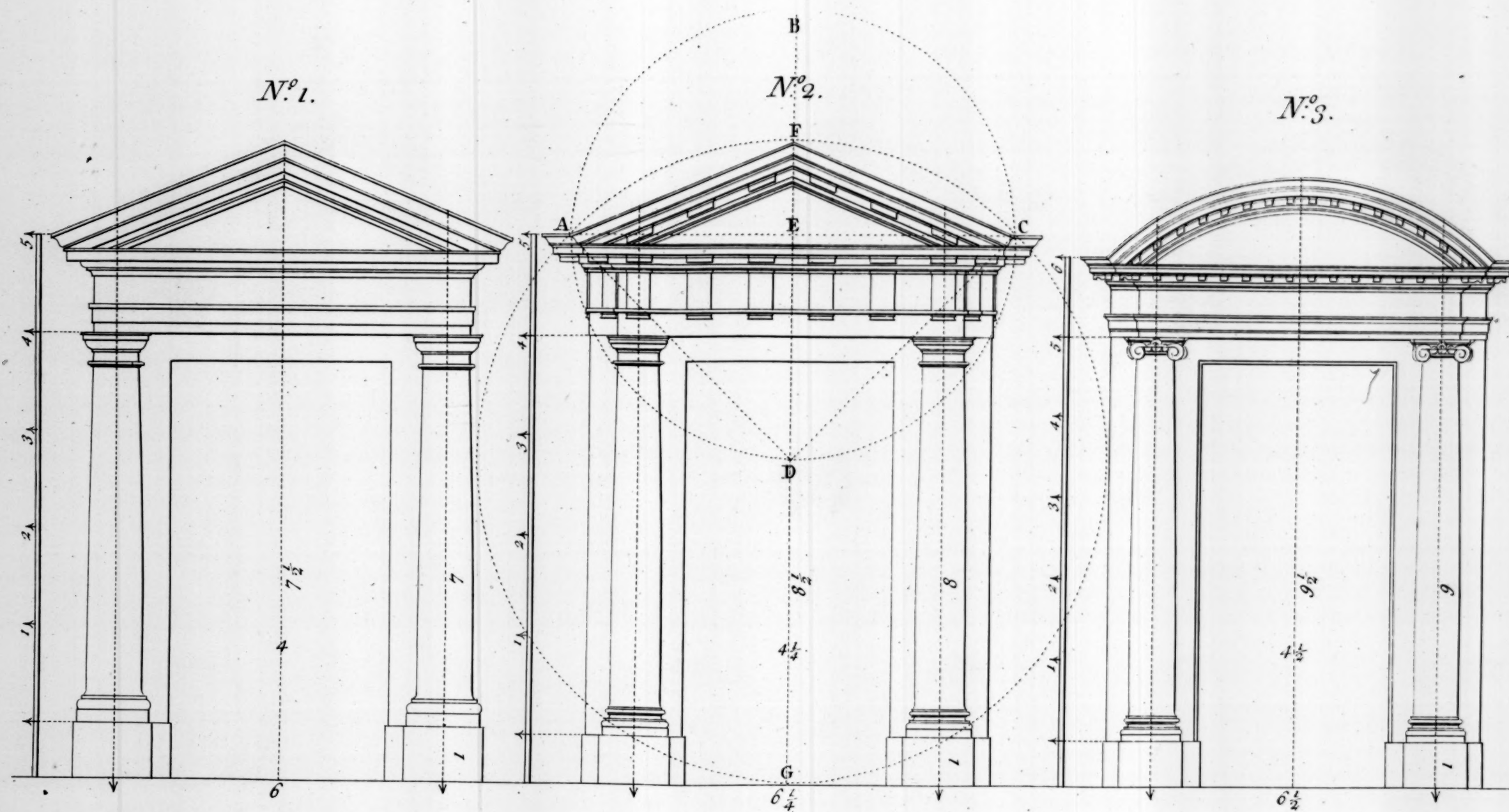








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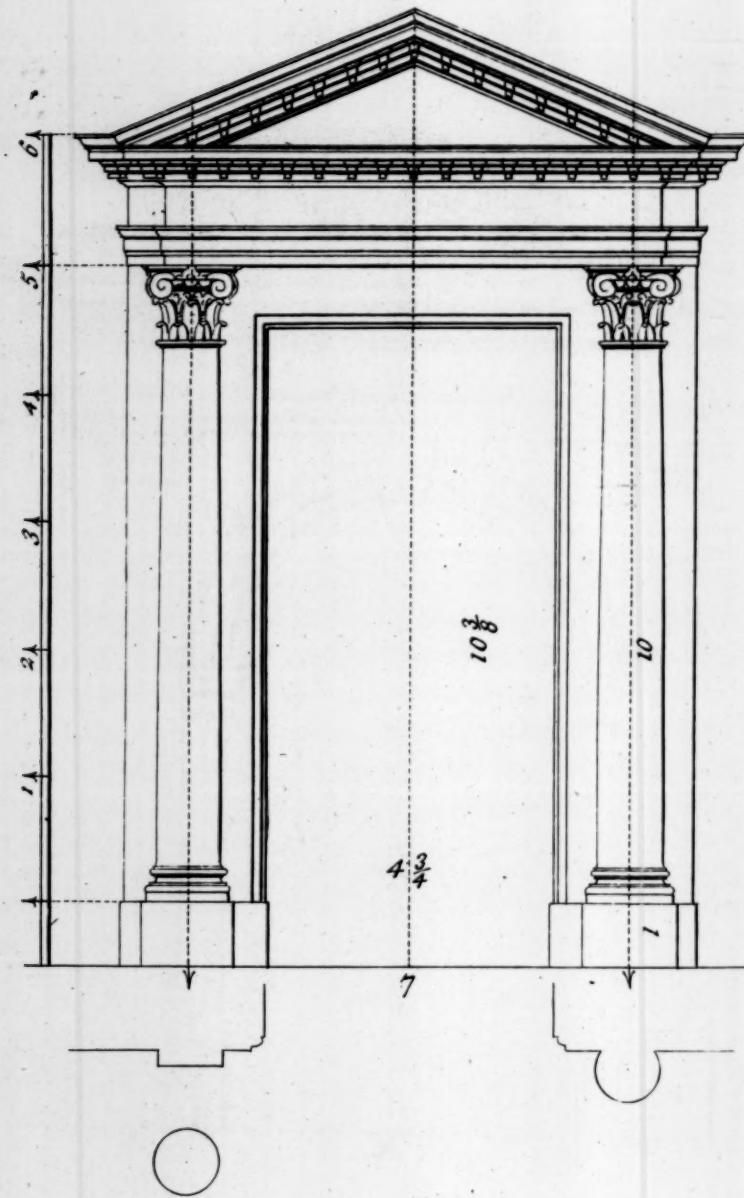
Tuscan

Dorick

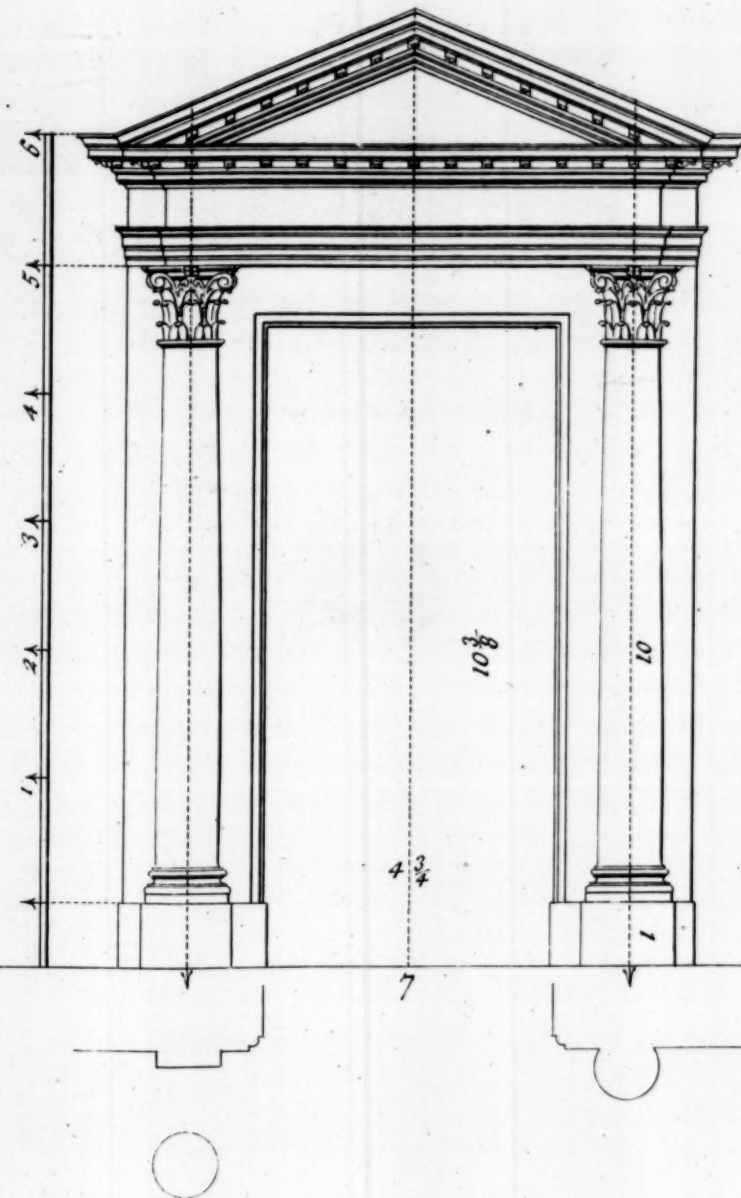
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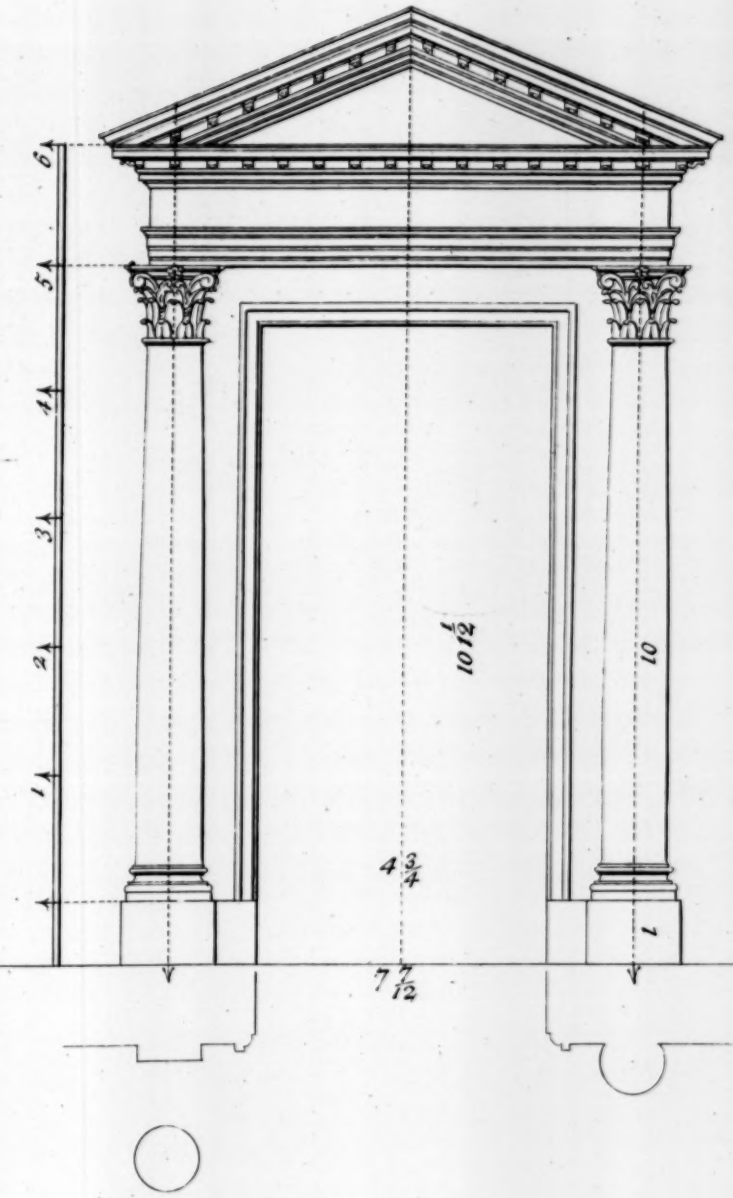
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Composite



N^o 2
Corinthian



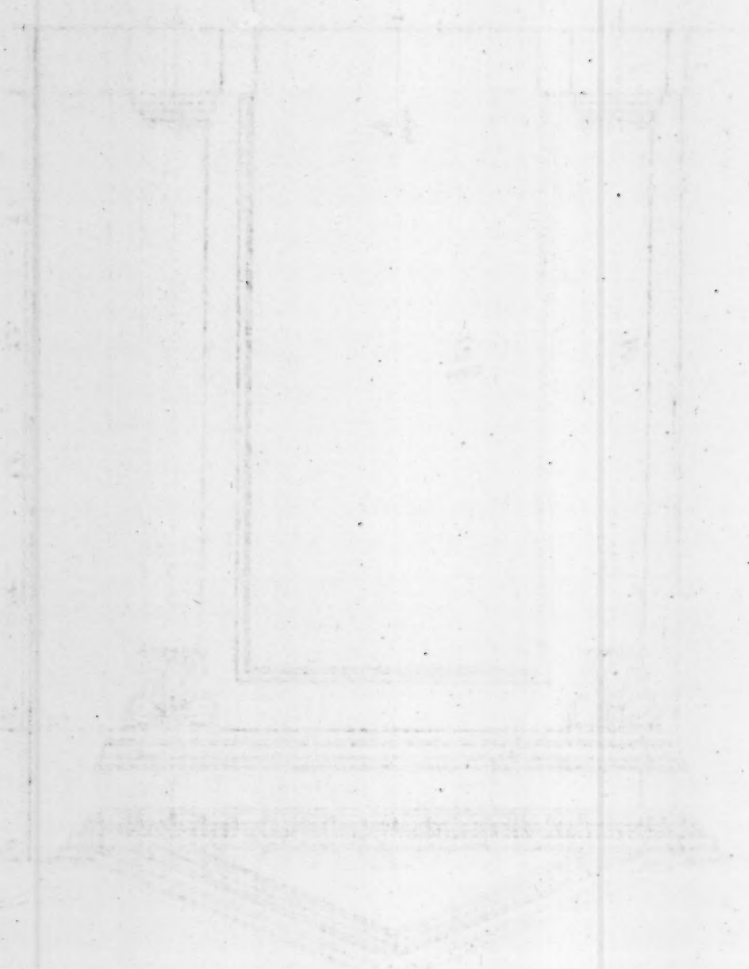
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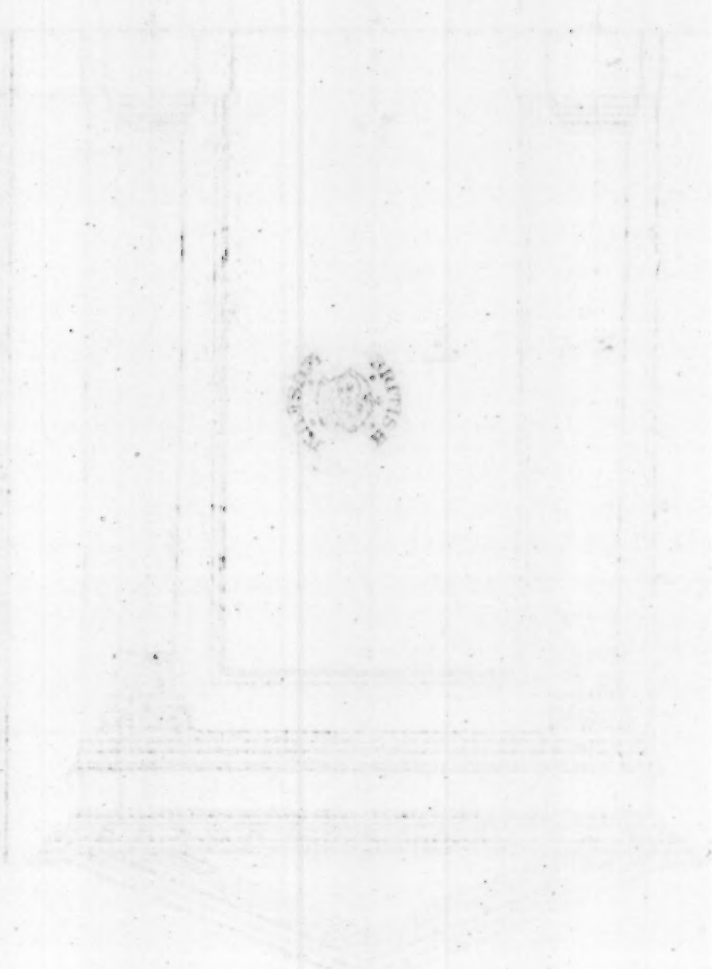
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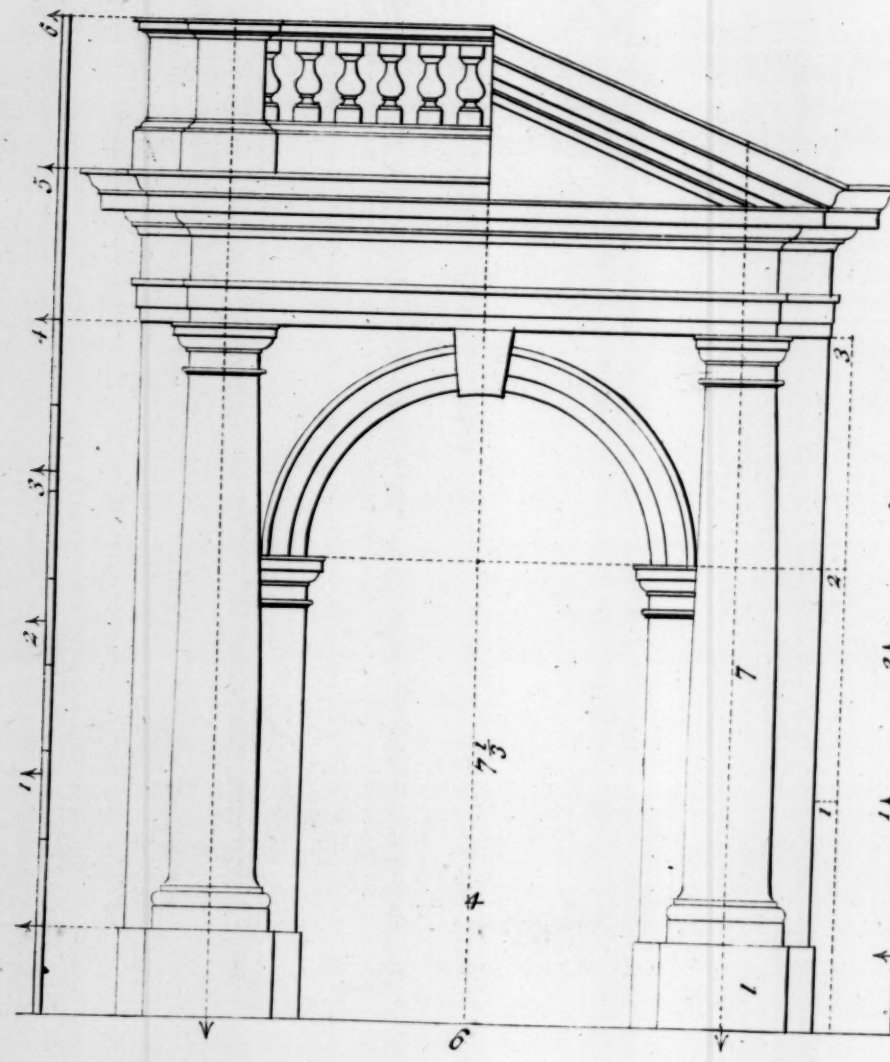


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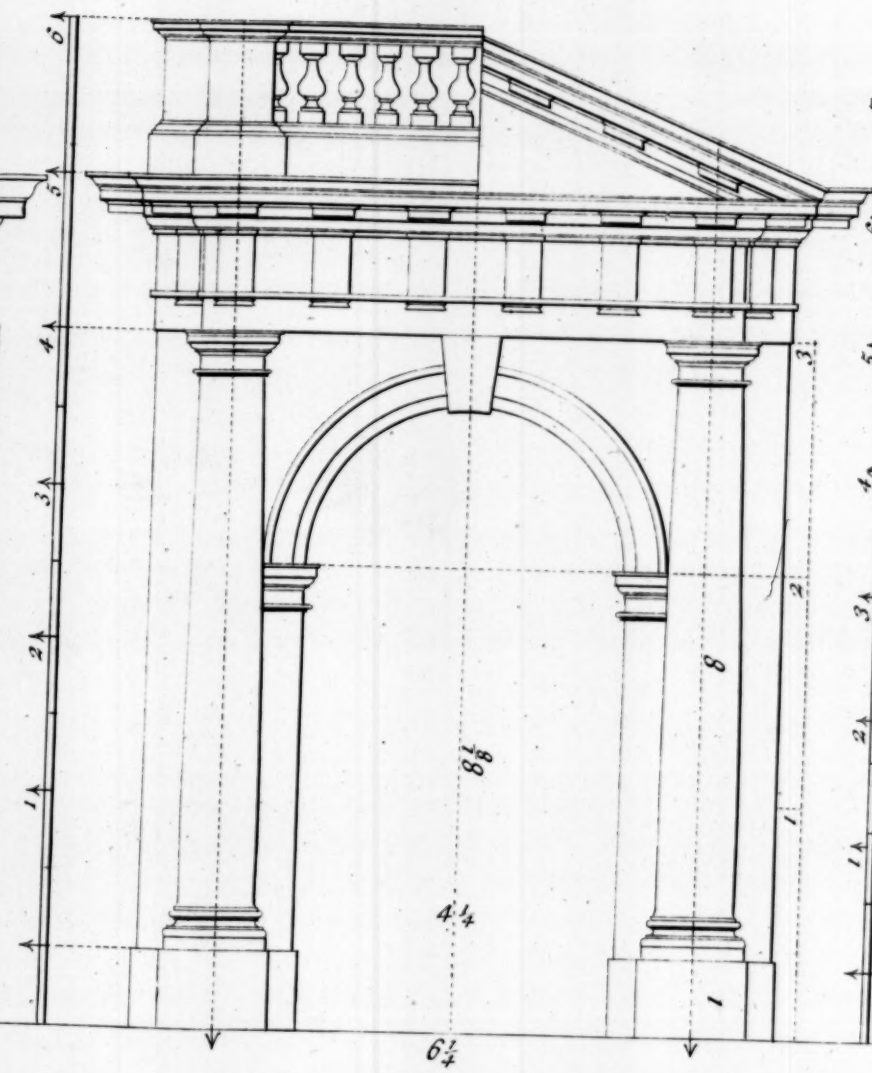


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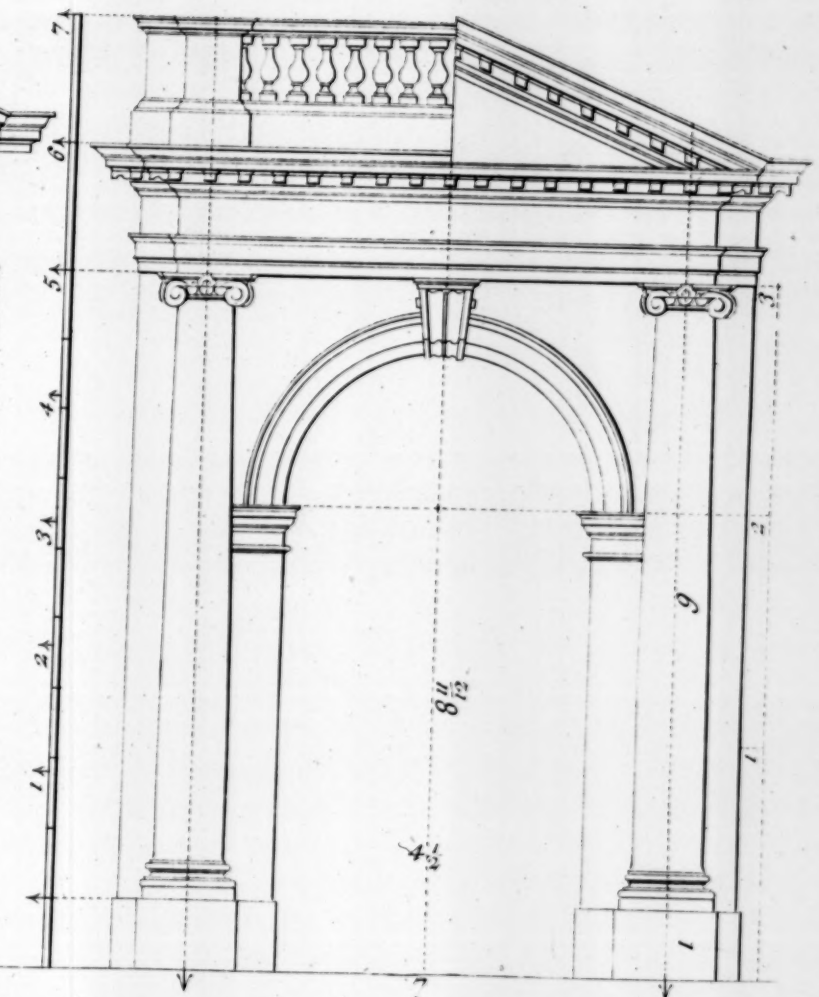
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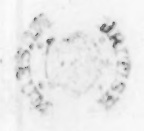


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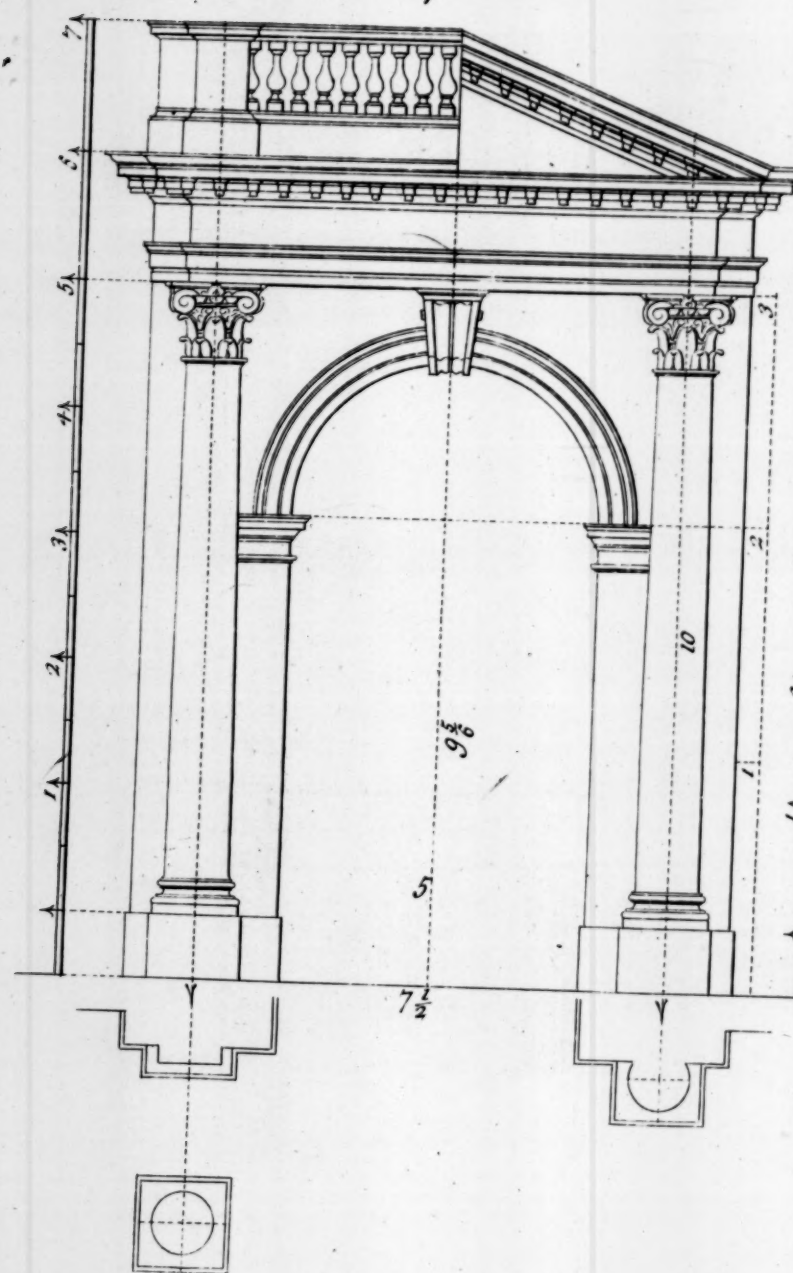


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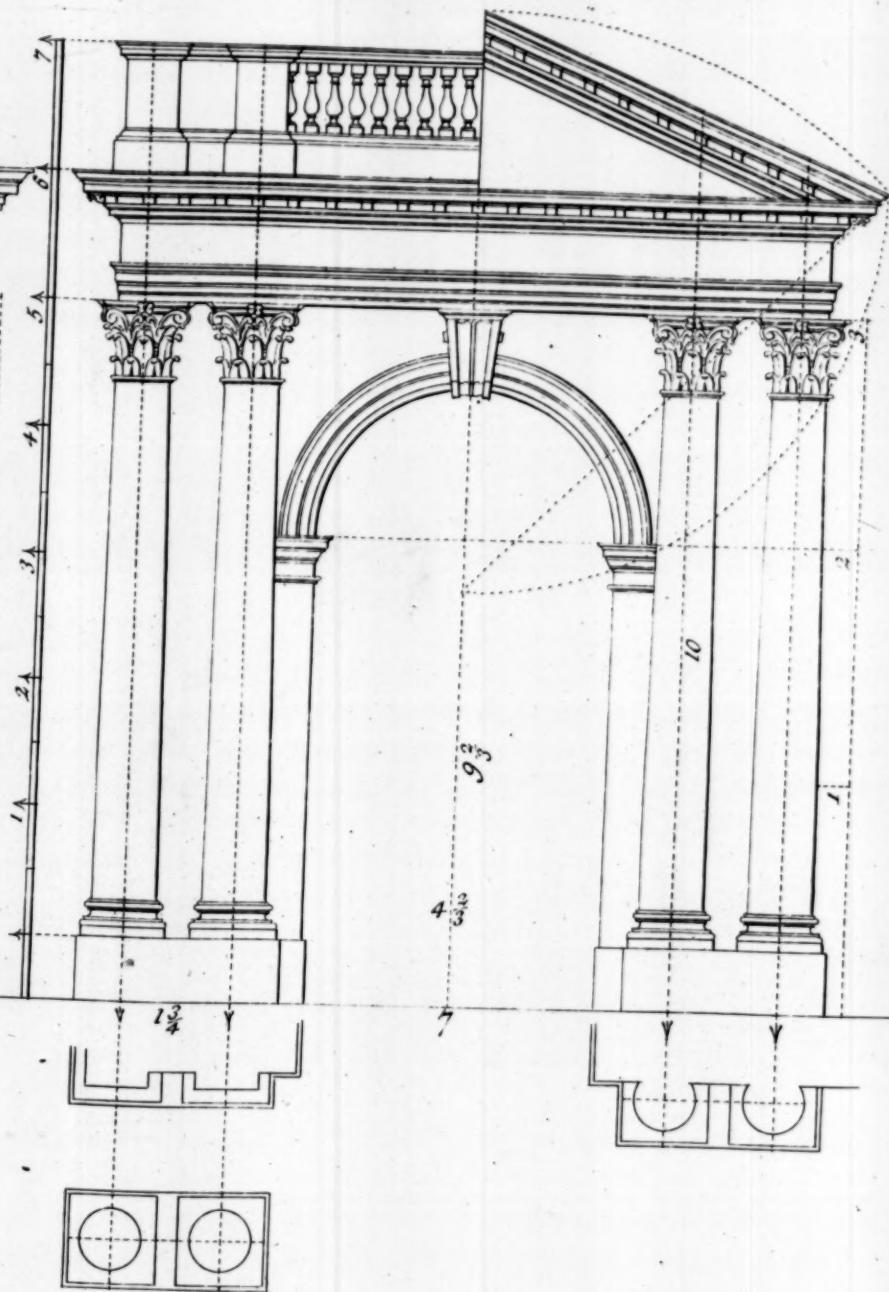




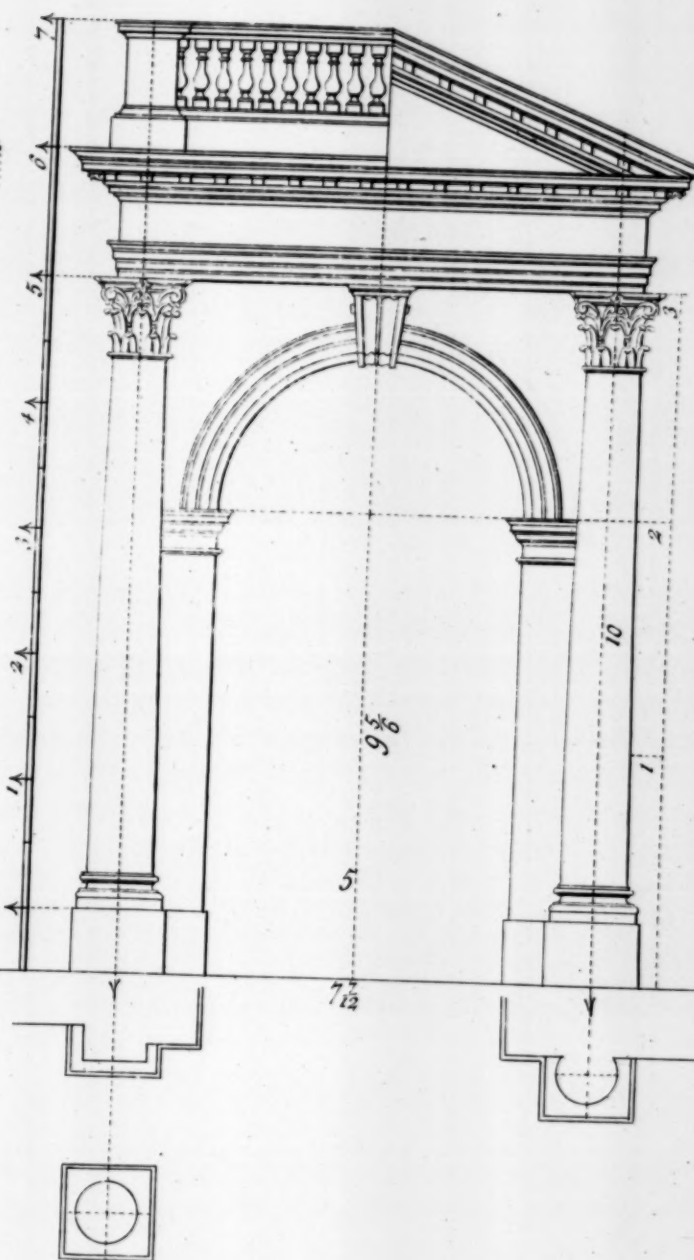
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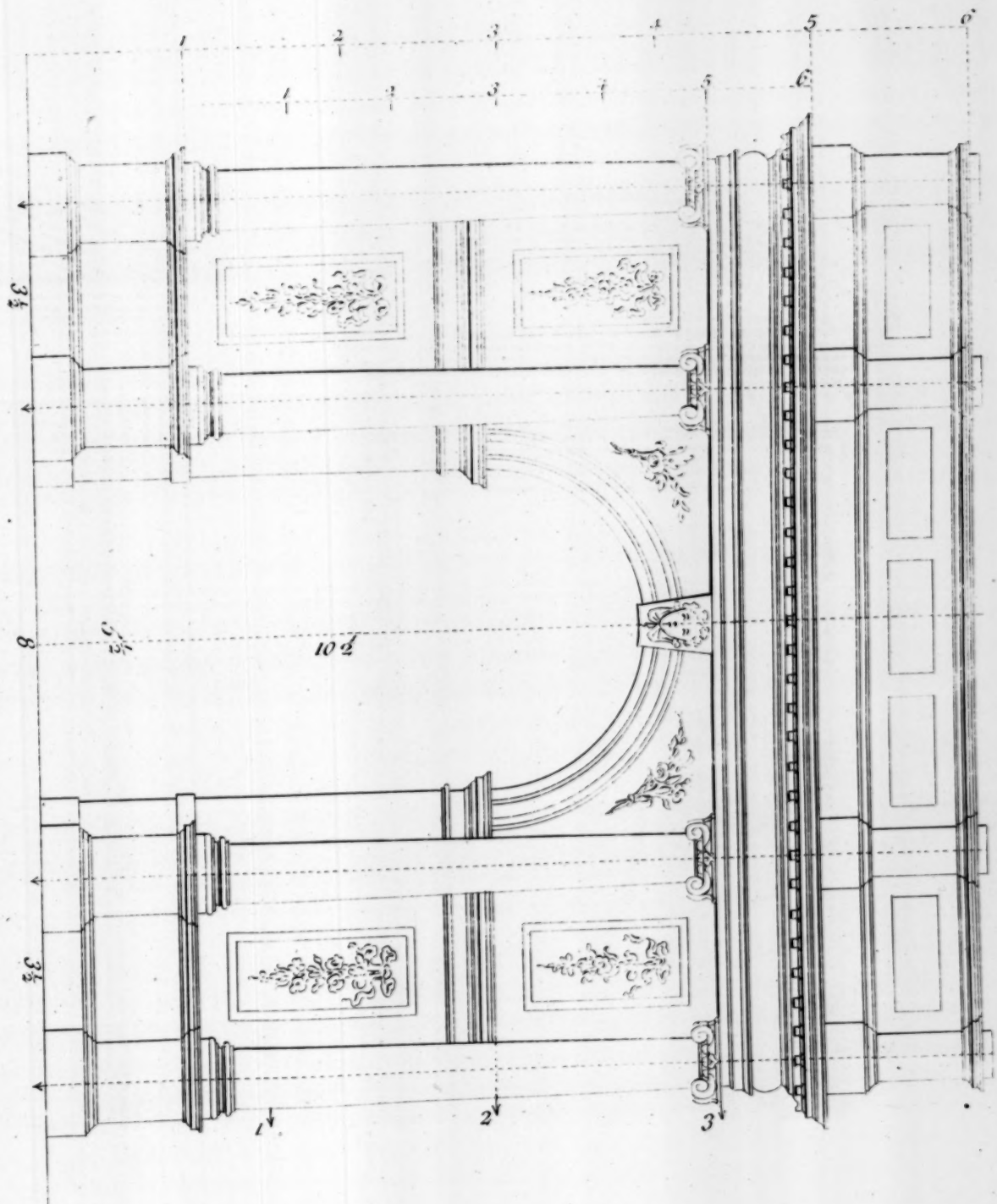
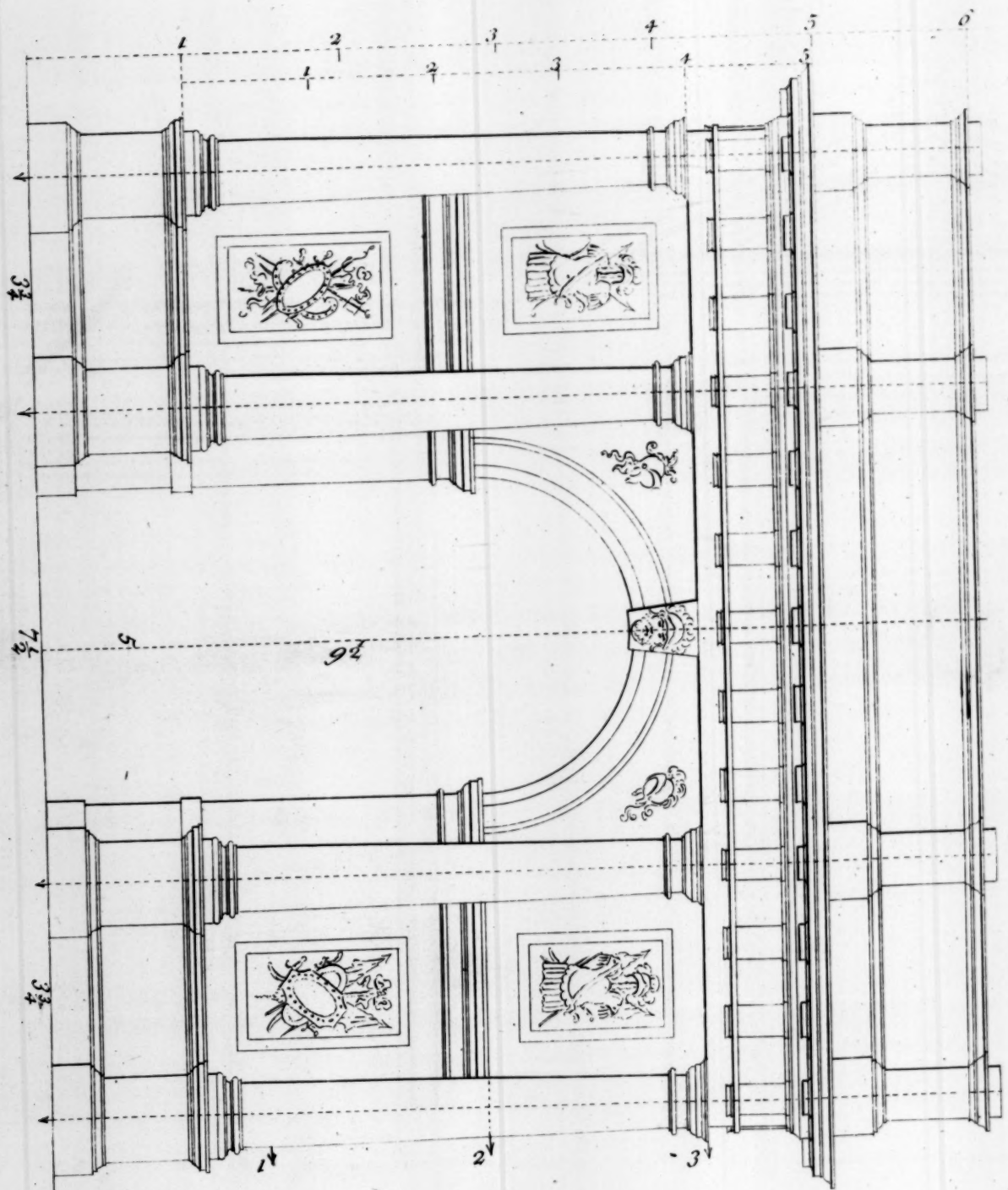
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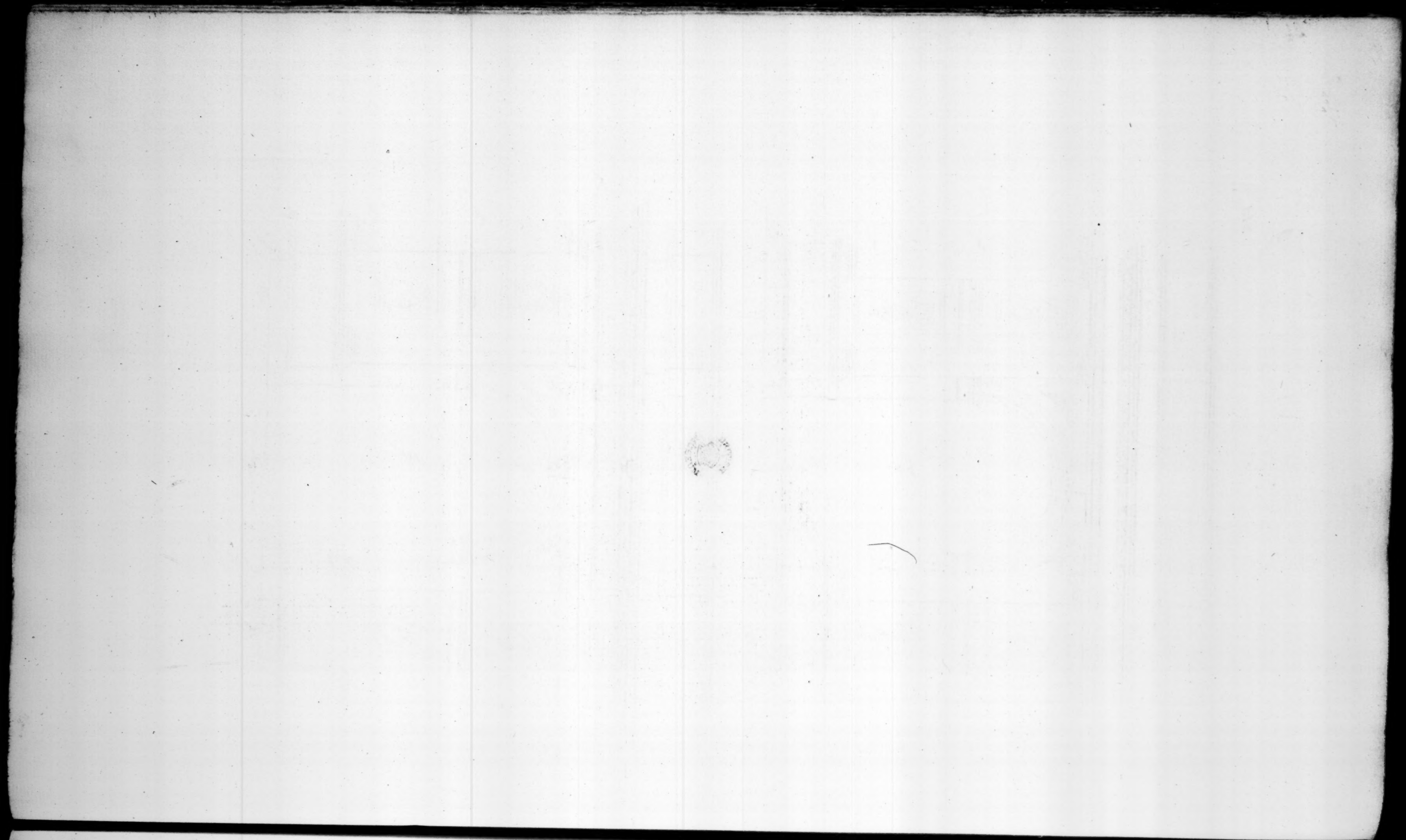


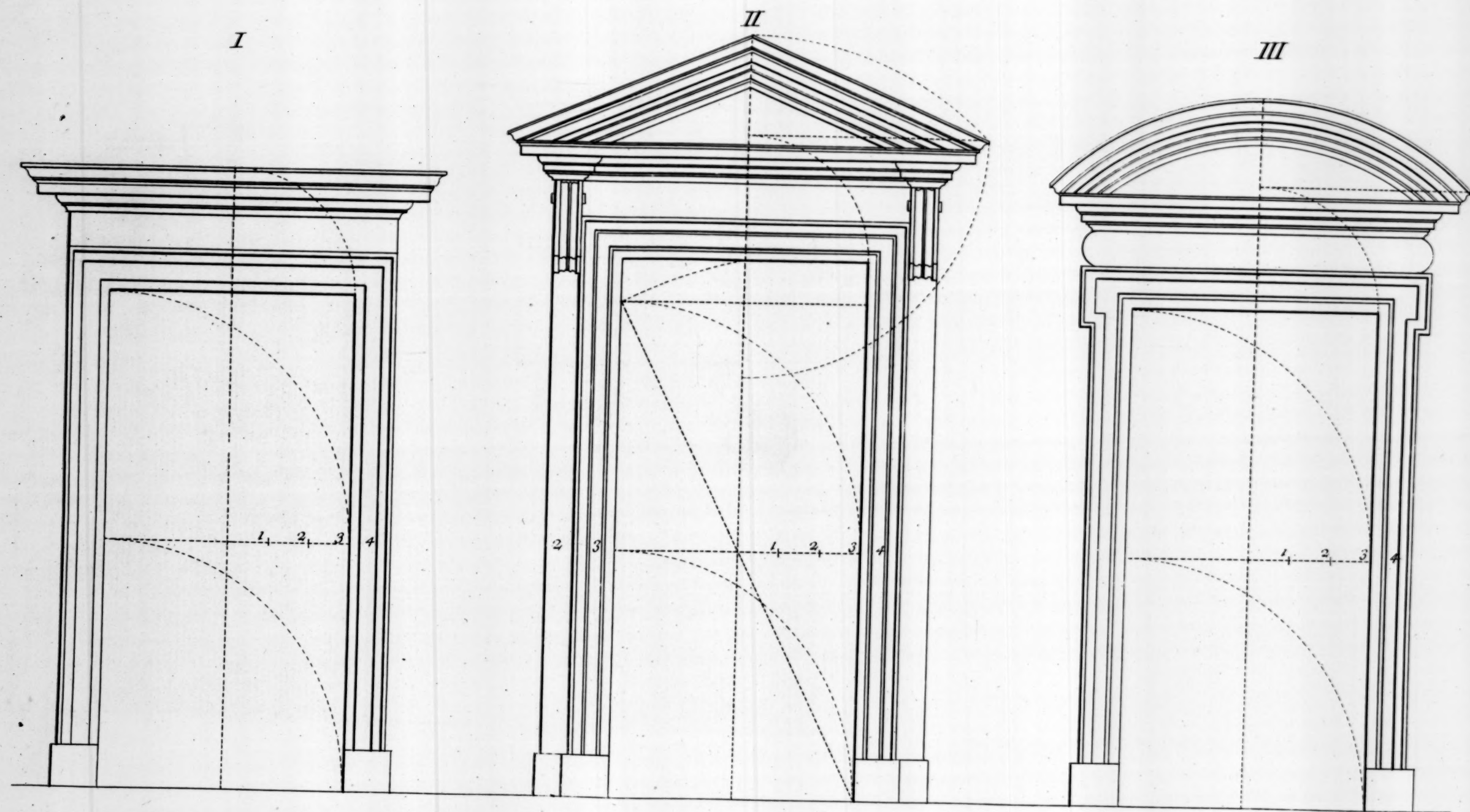
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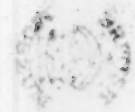
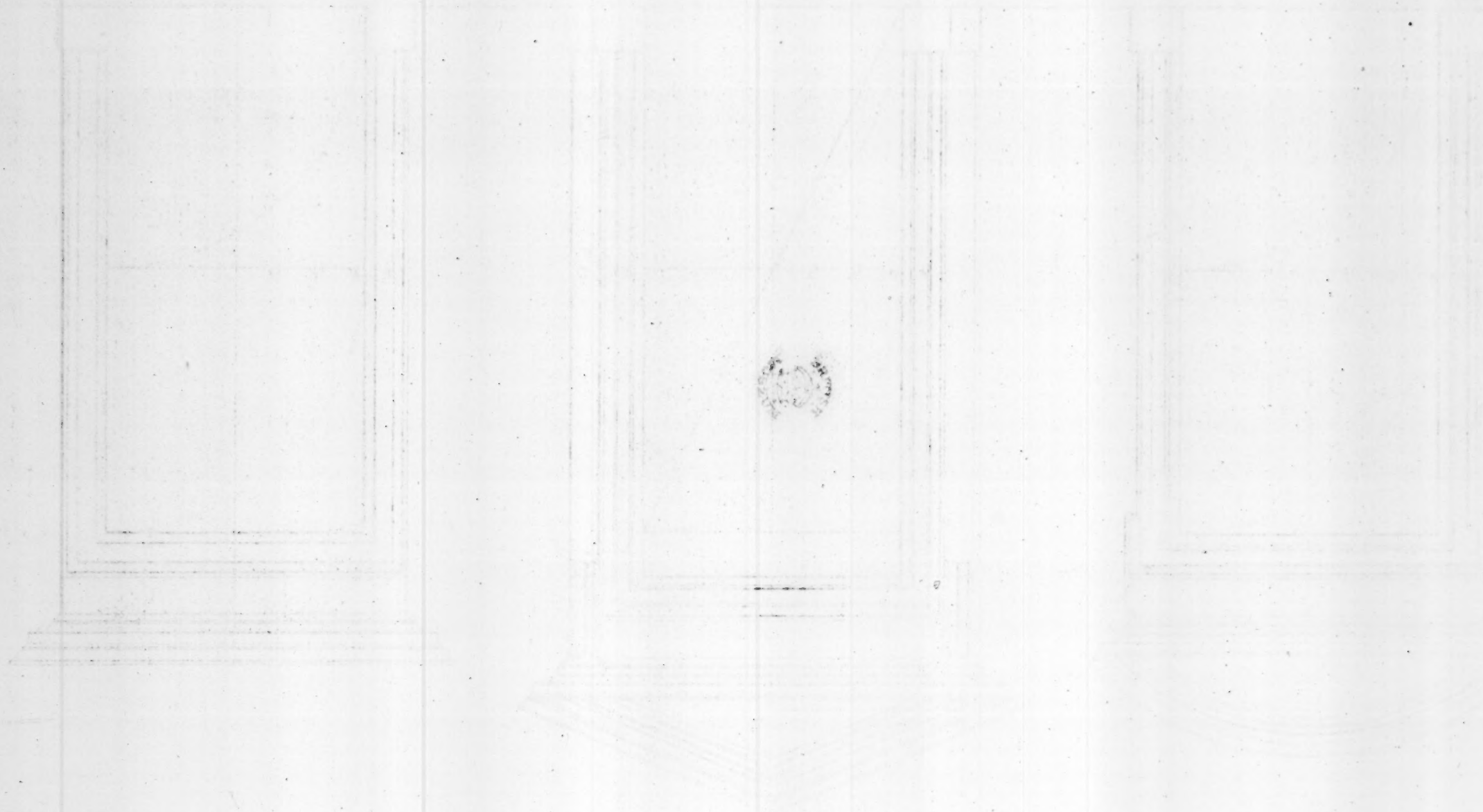


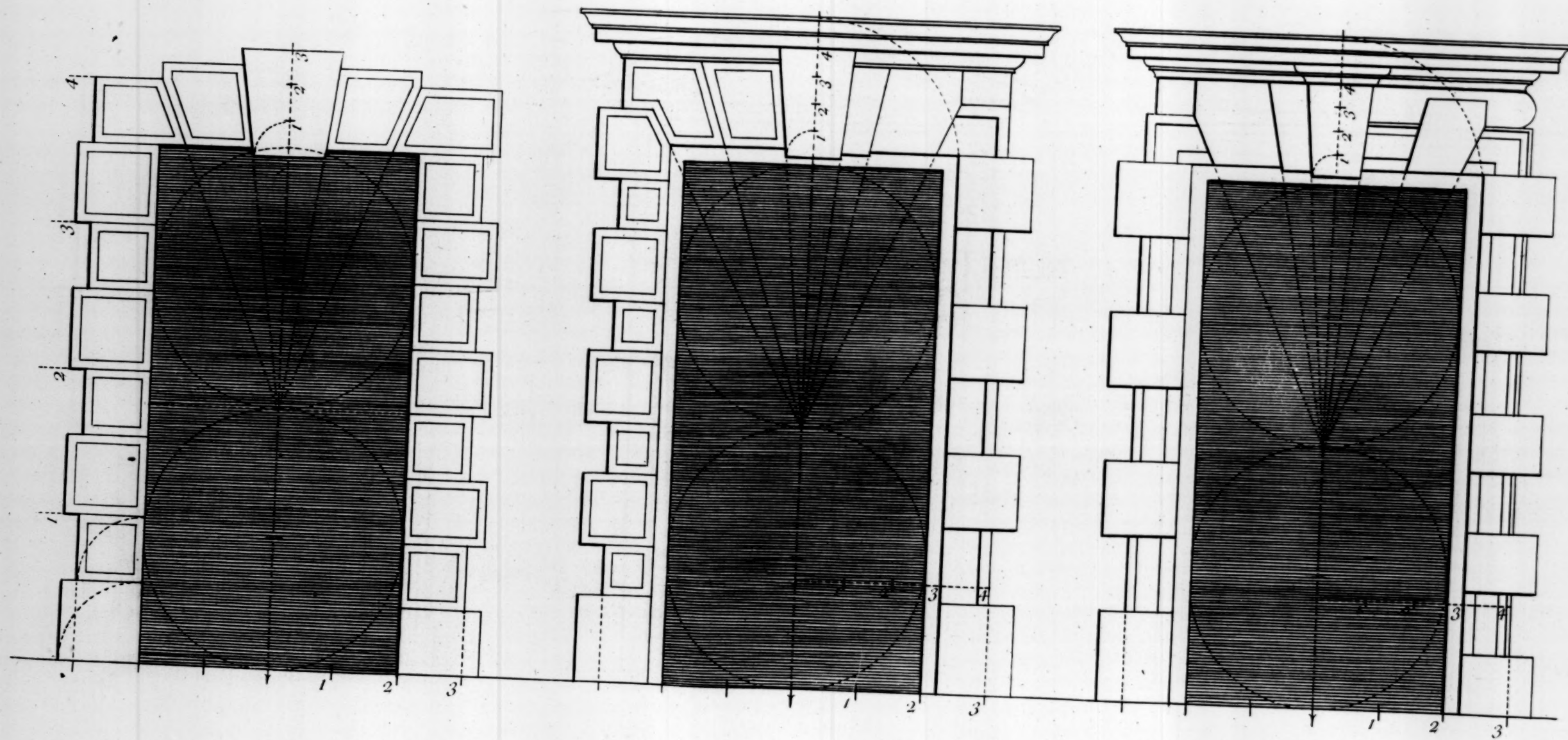


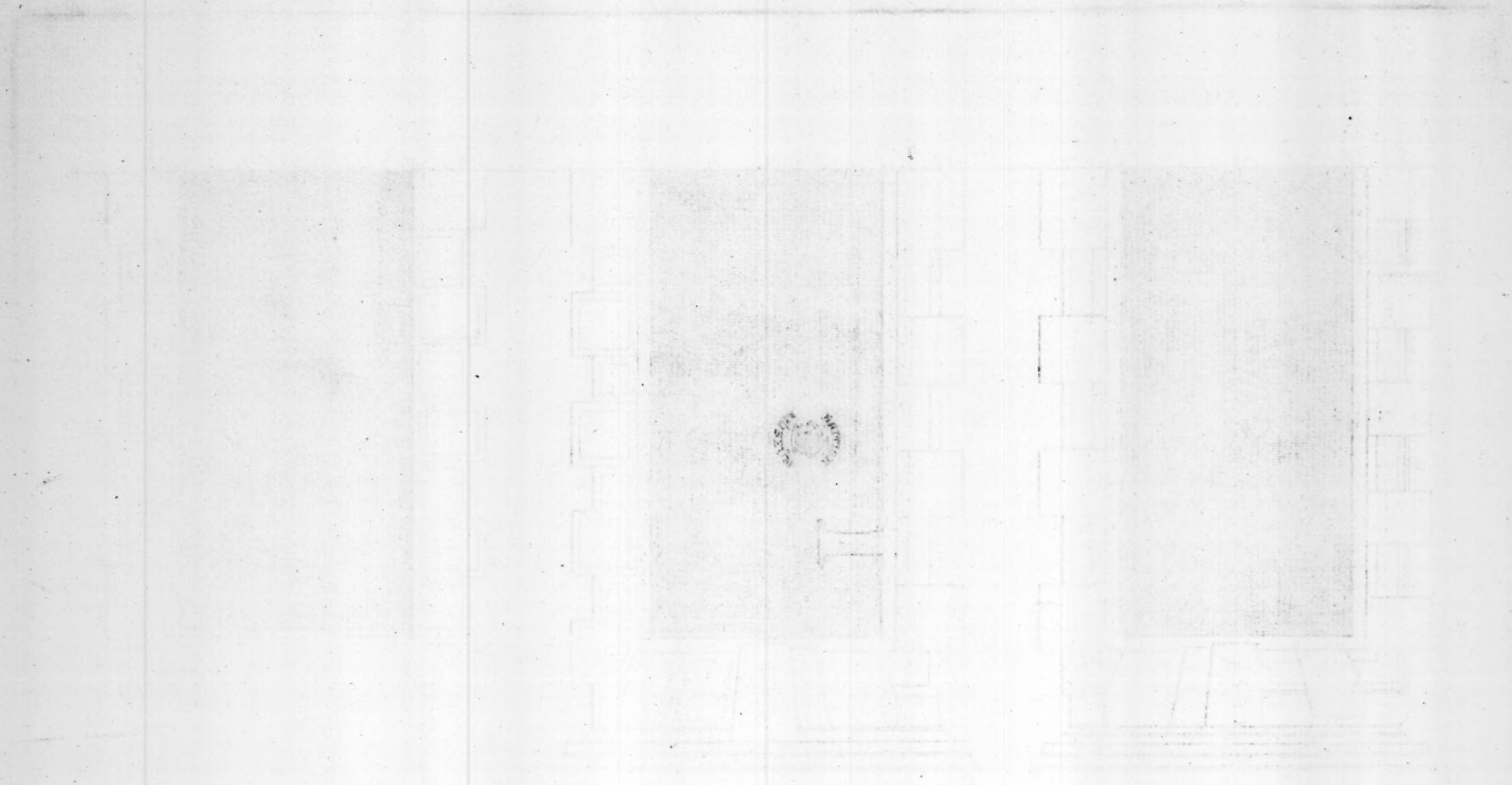




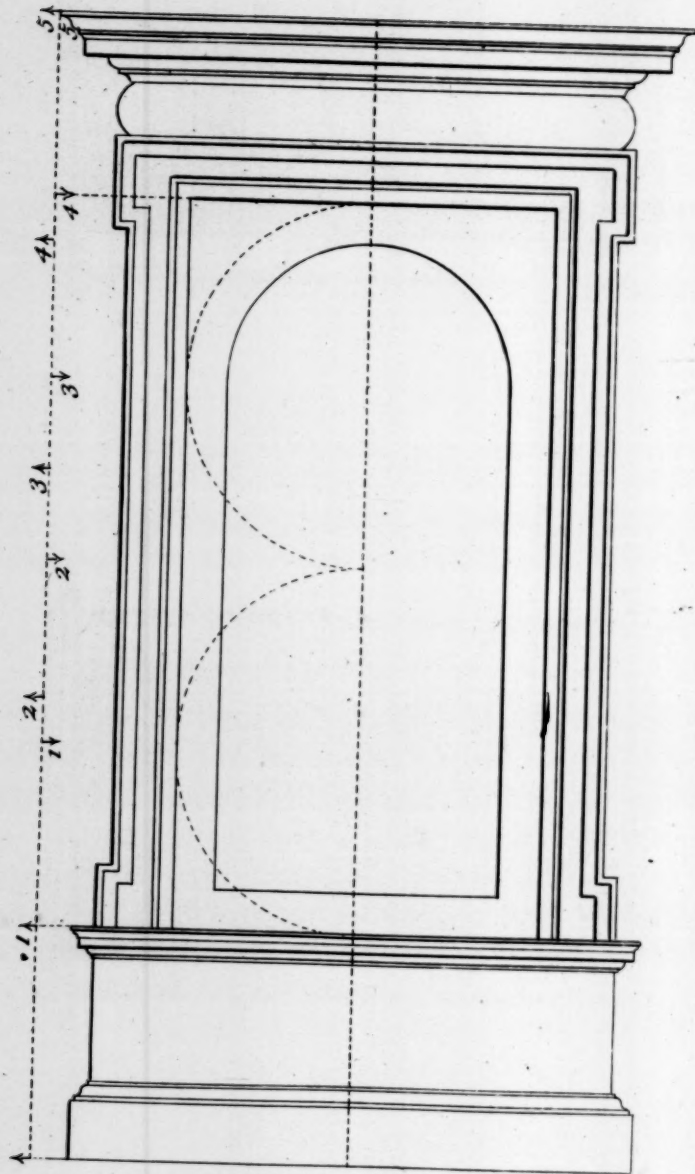




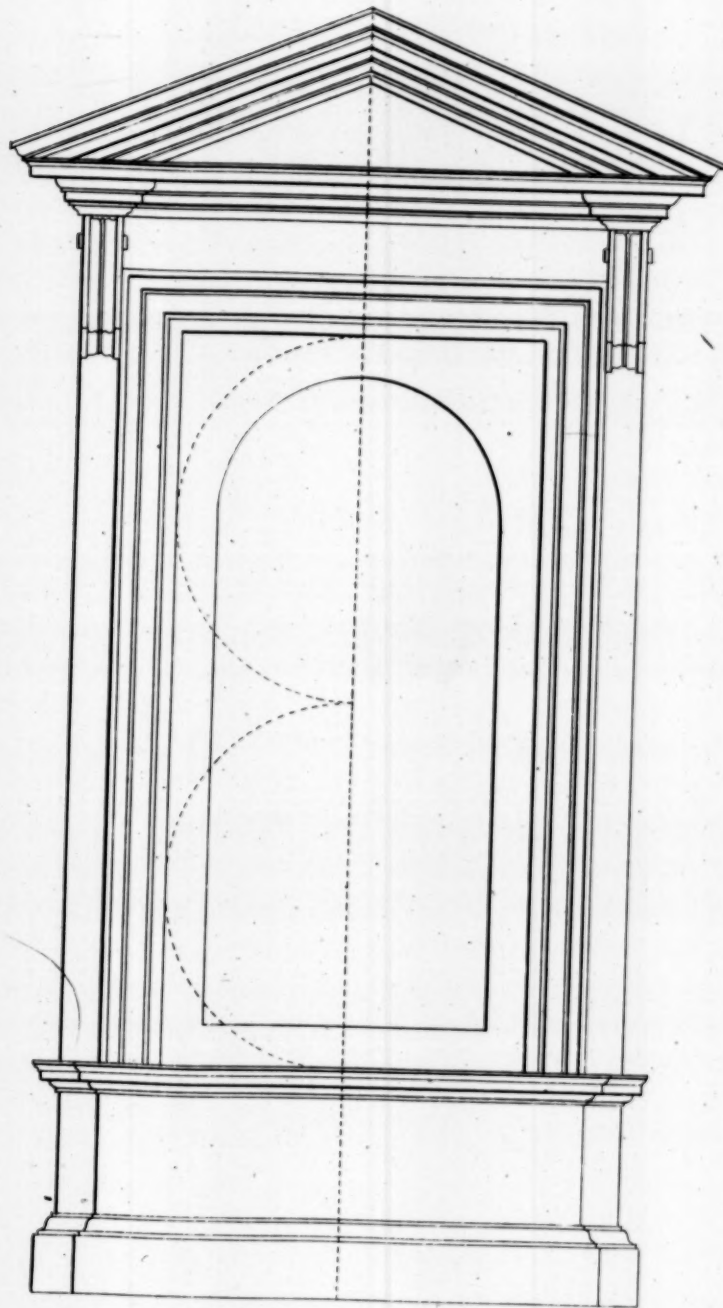




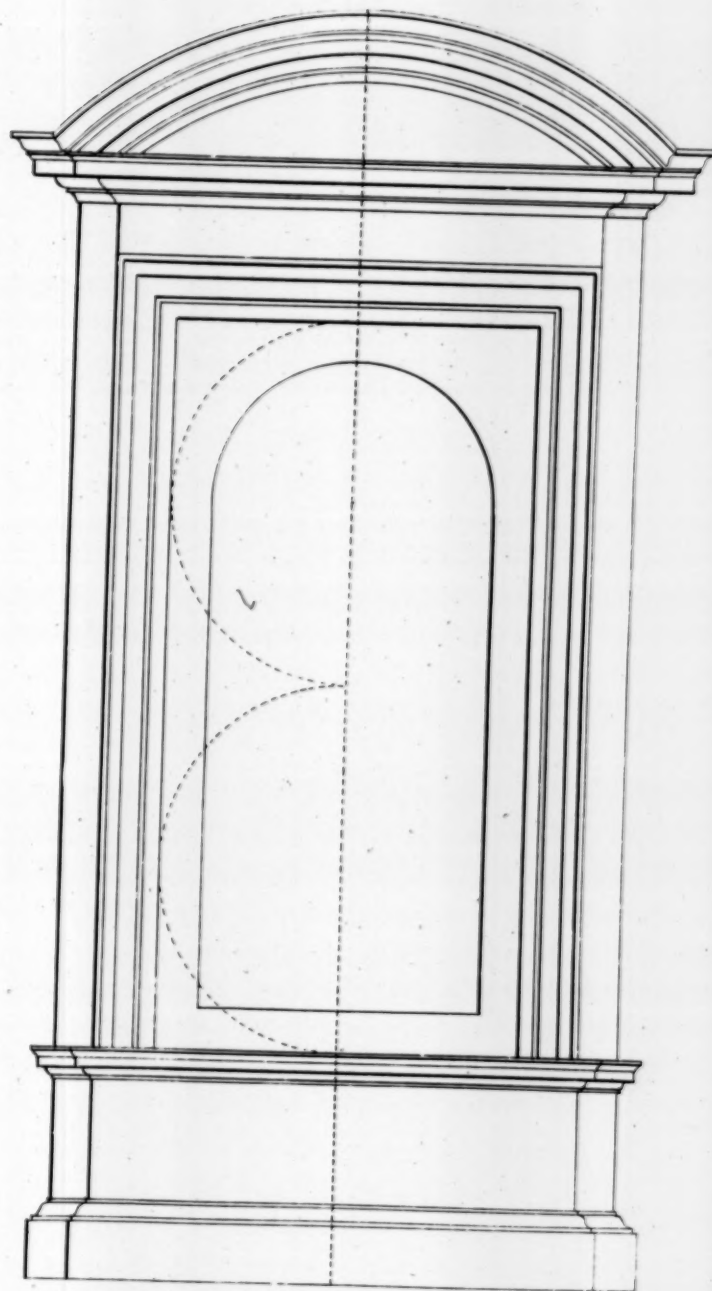
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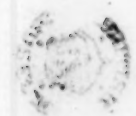


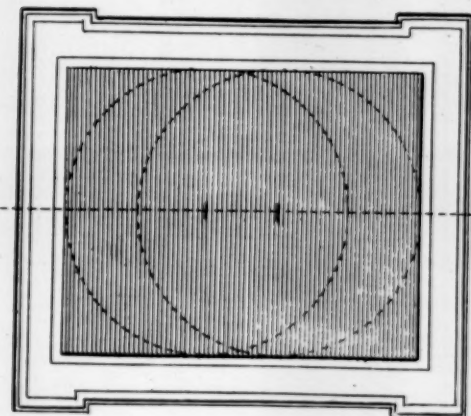
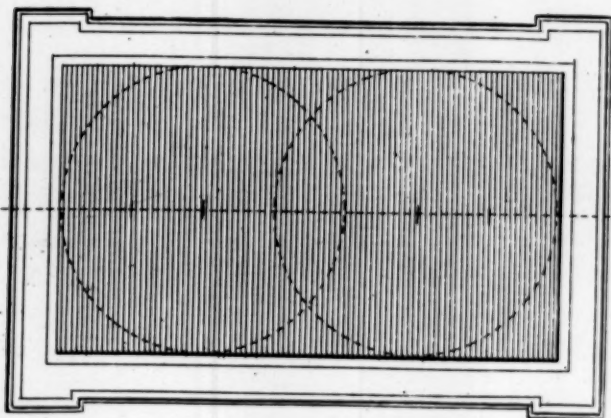
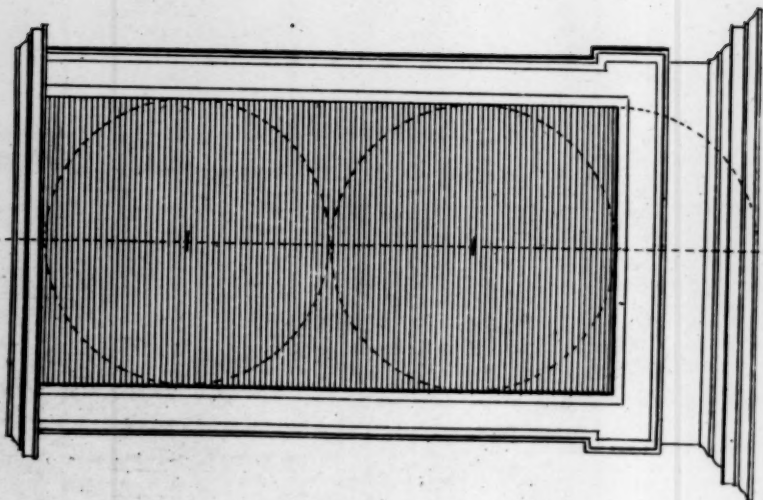
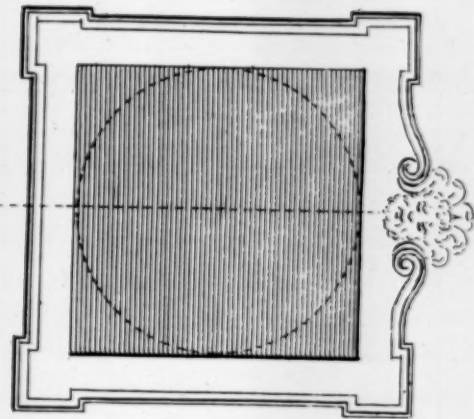
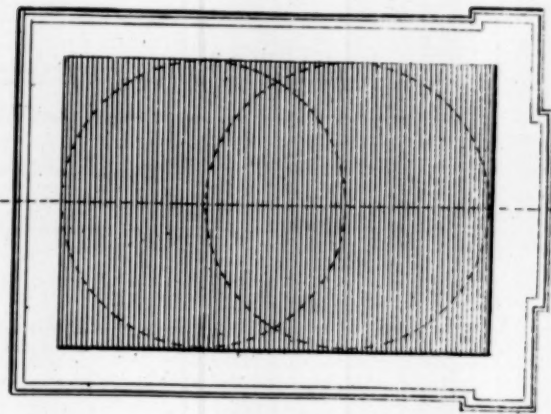
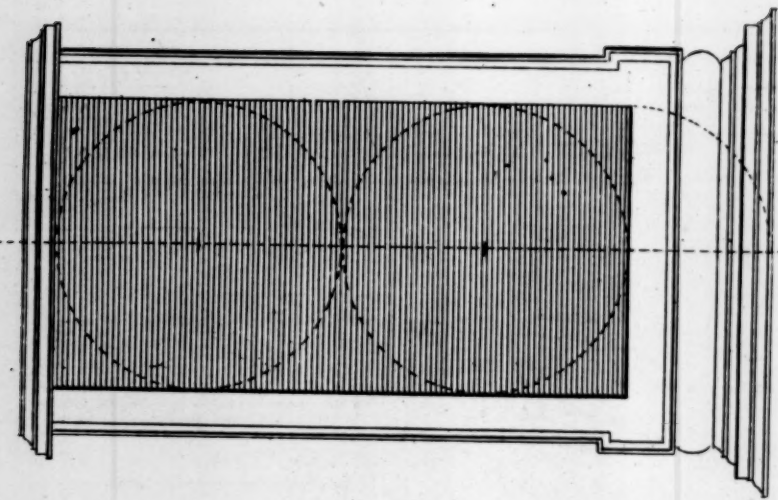
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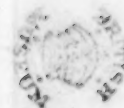


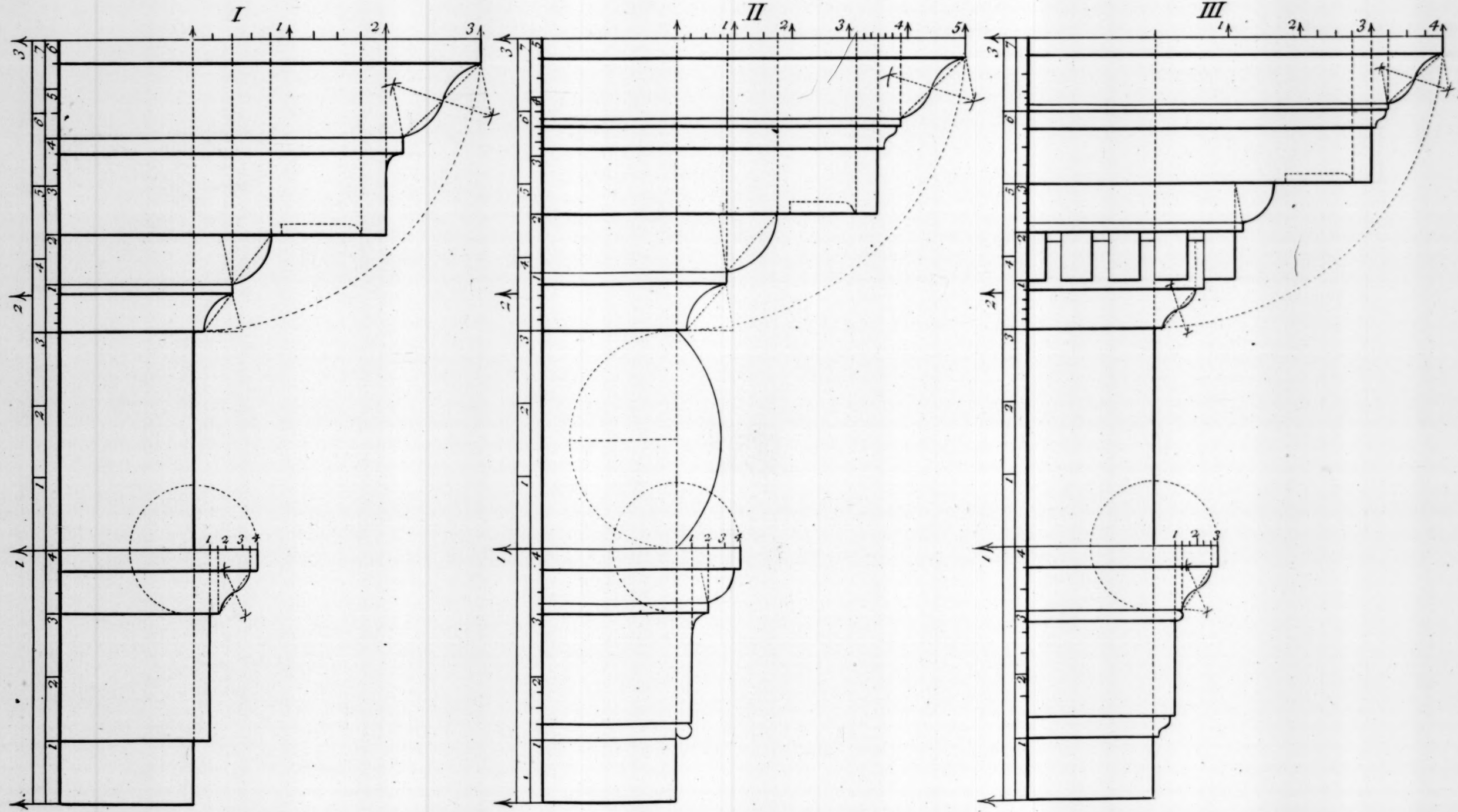
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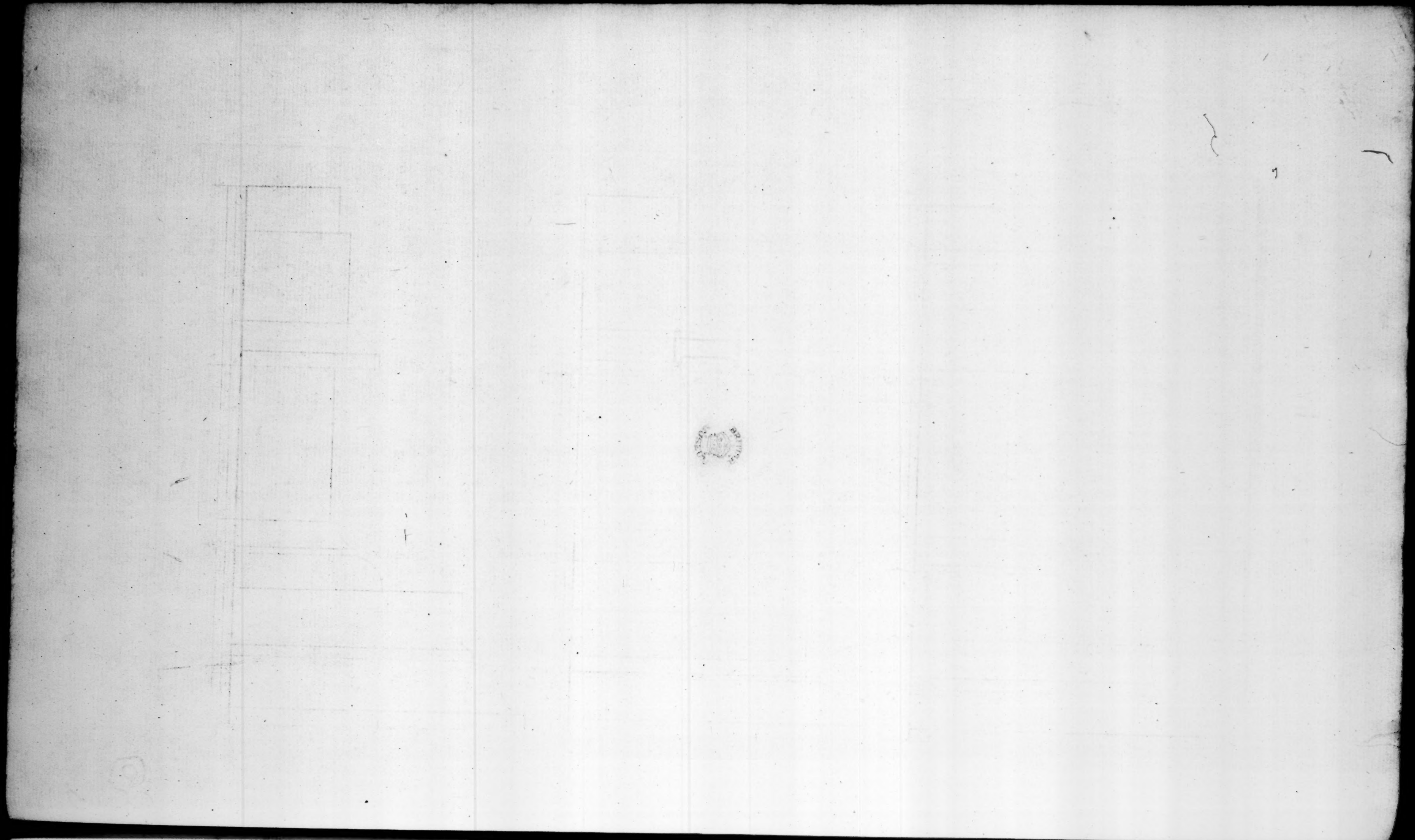


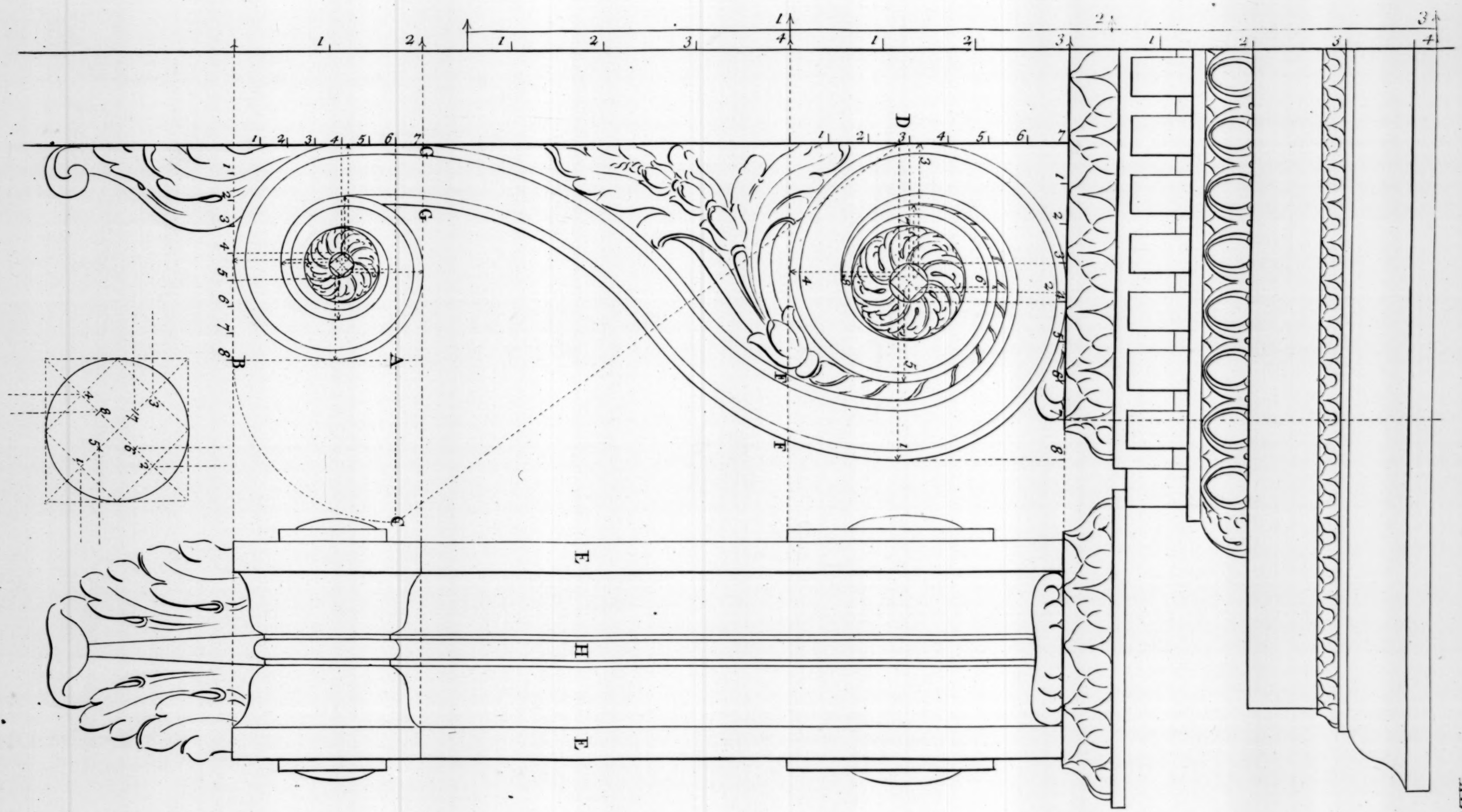




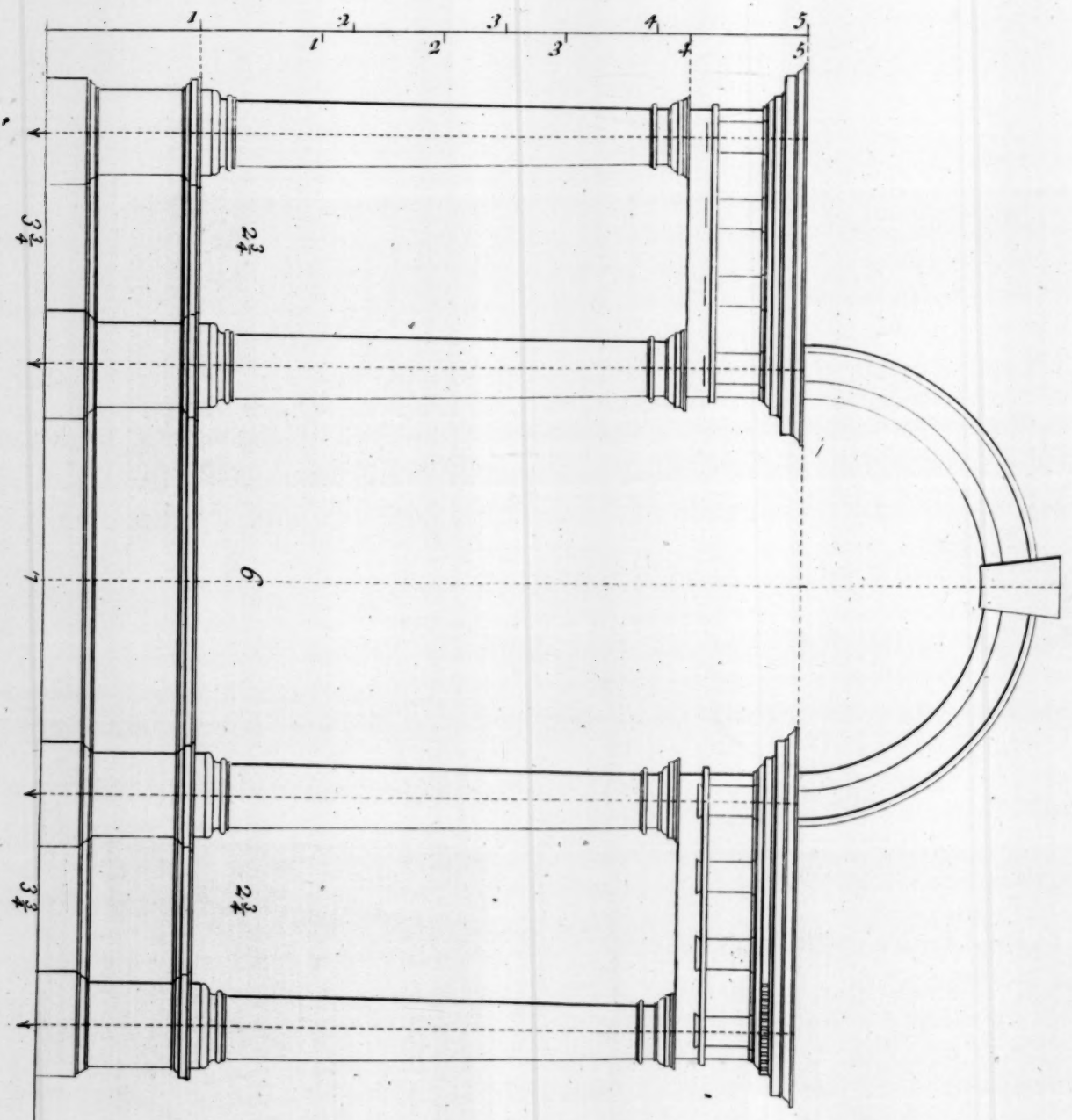
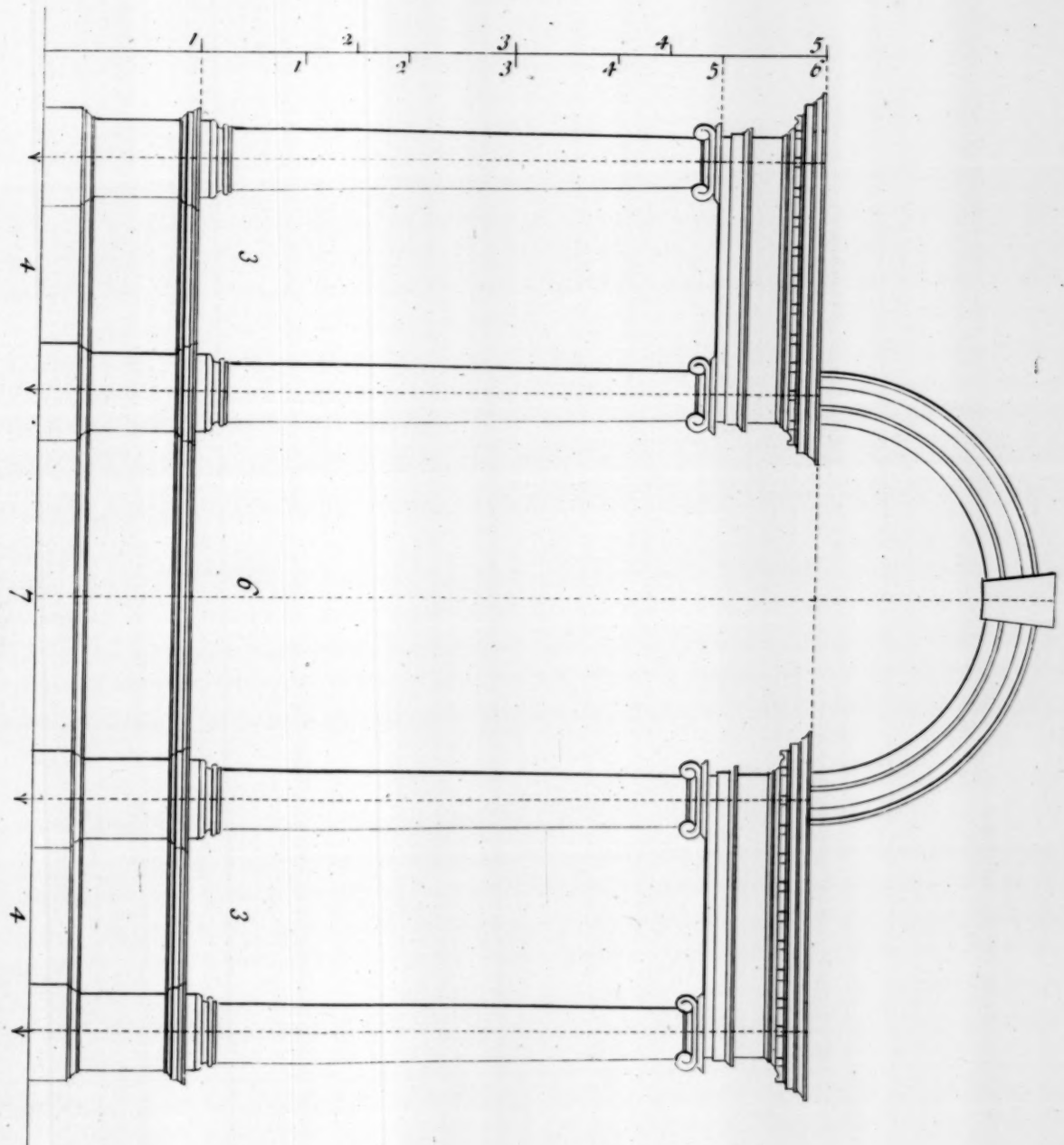








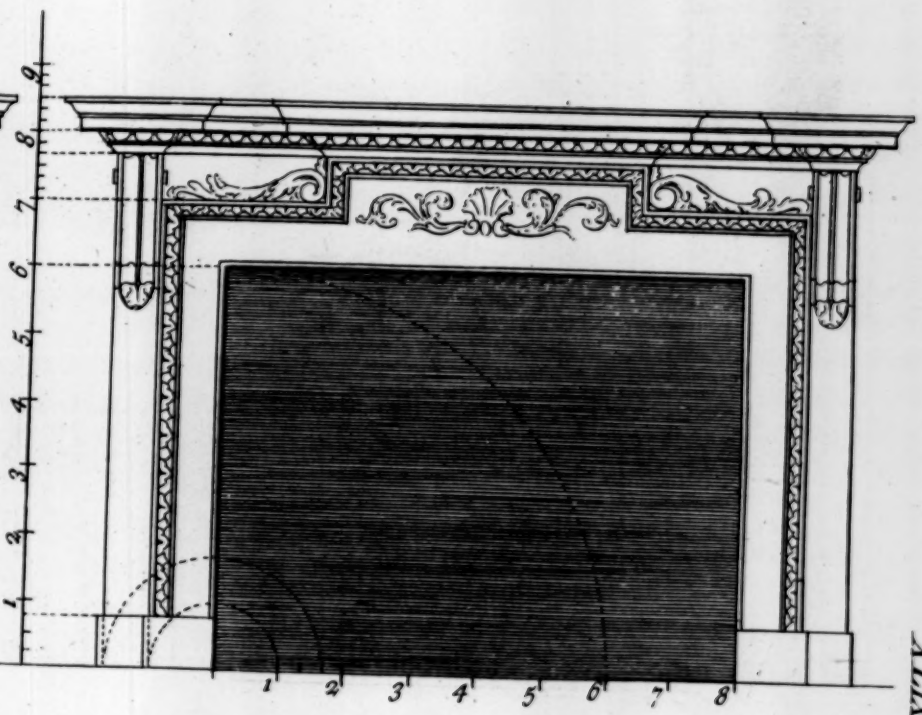
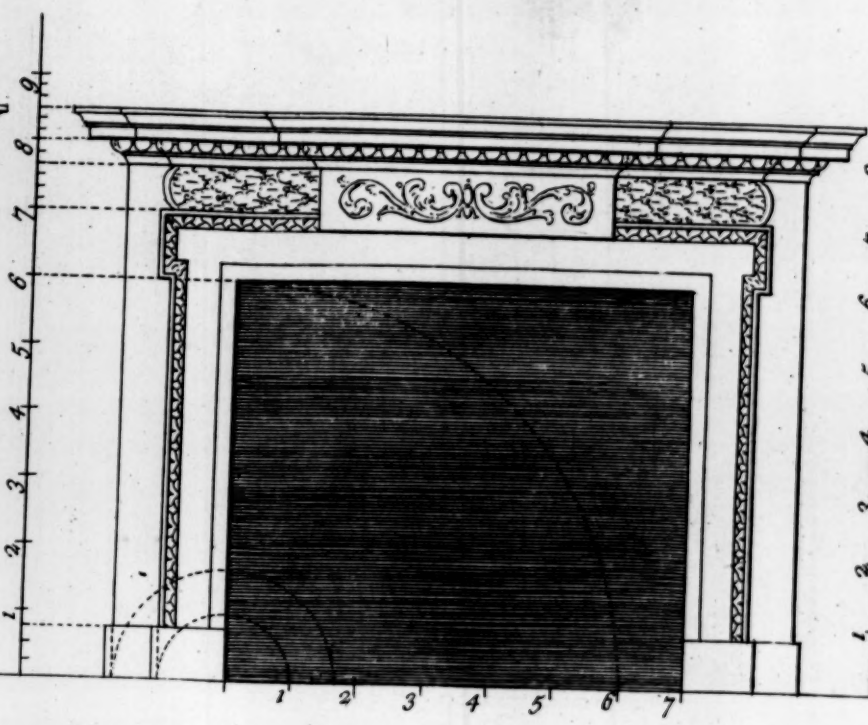
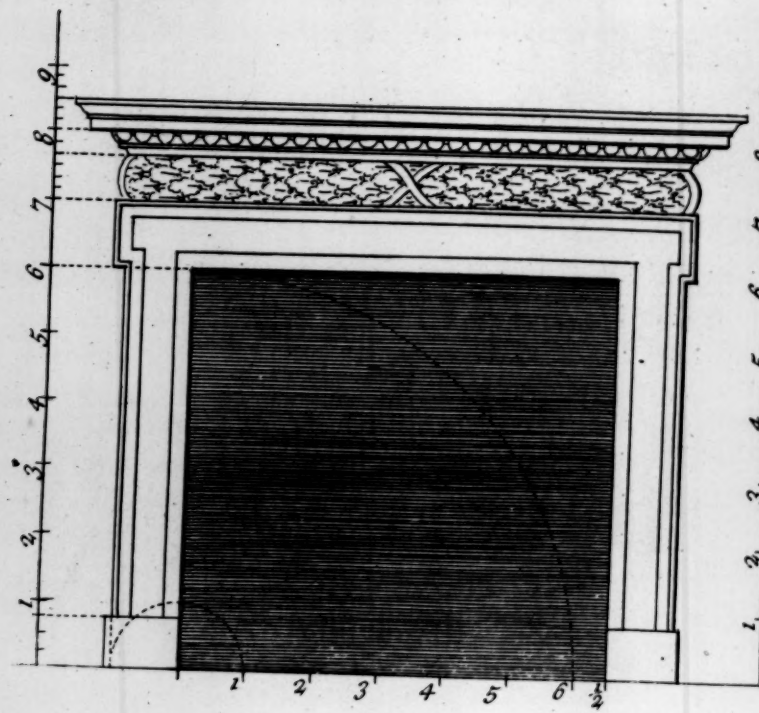
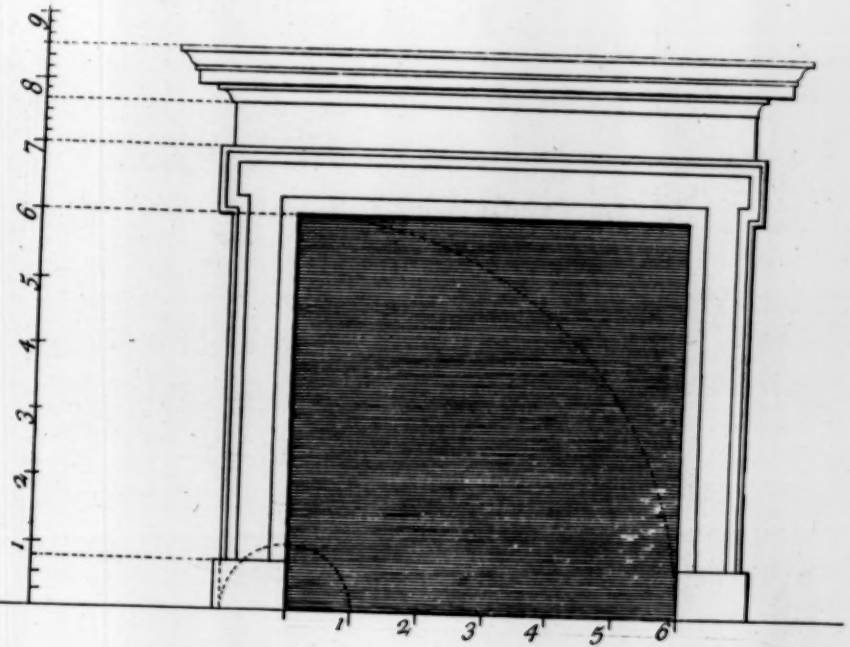
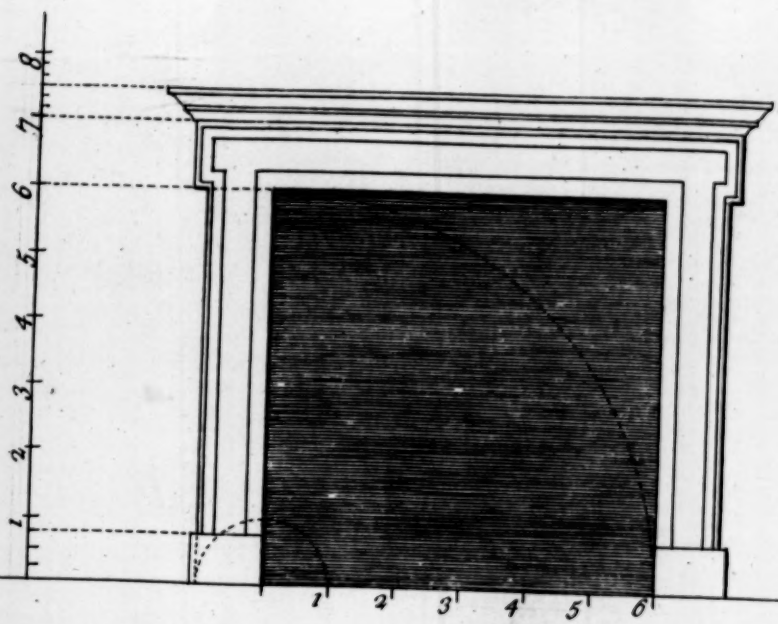
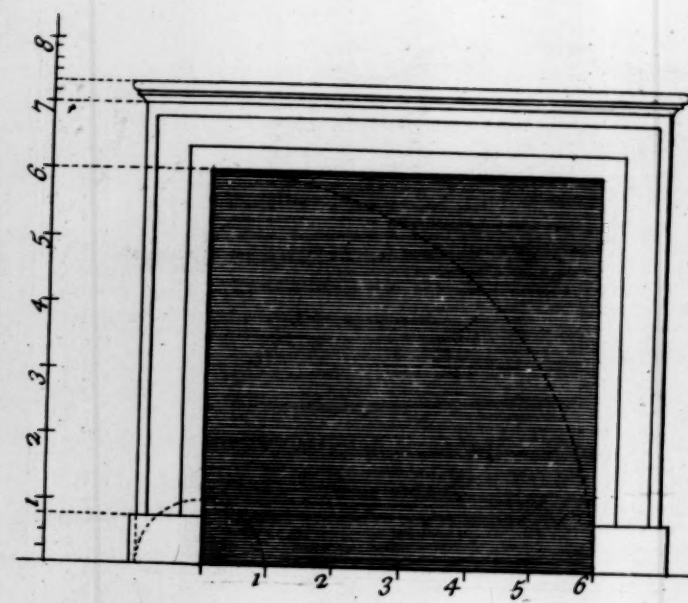




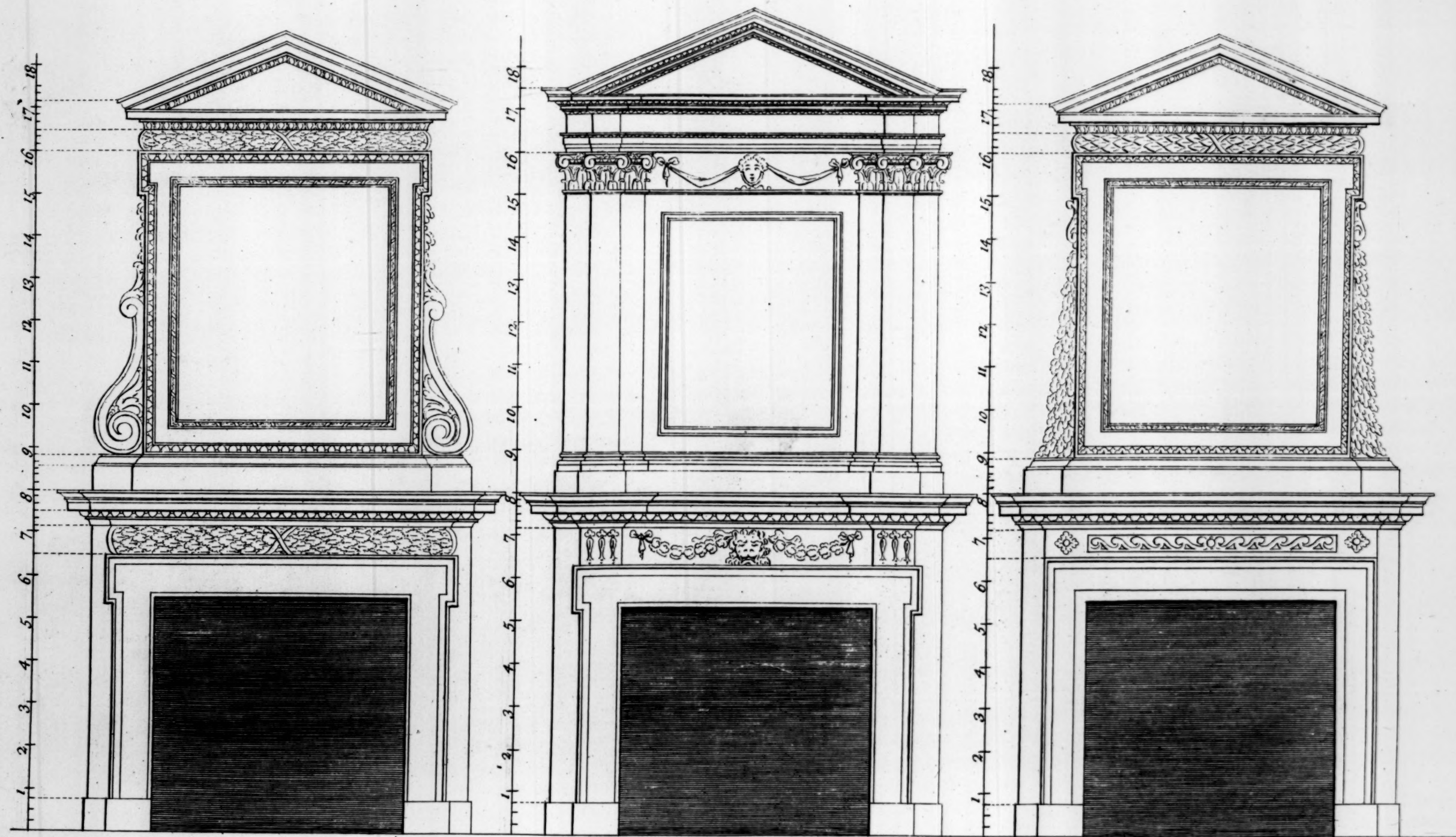


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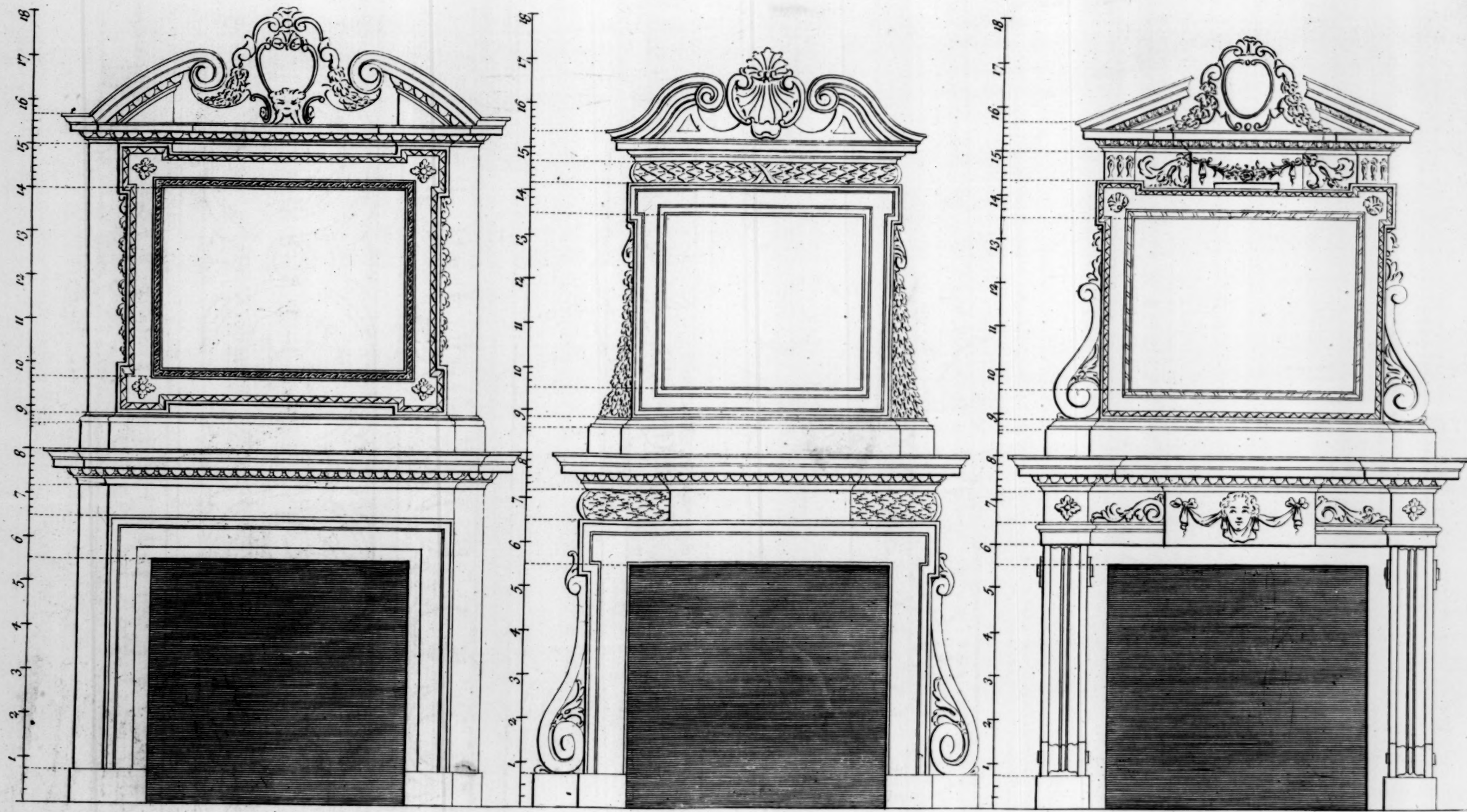




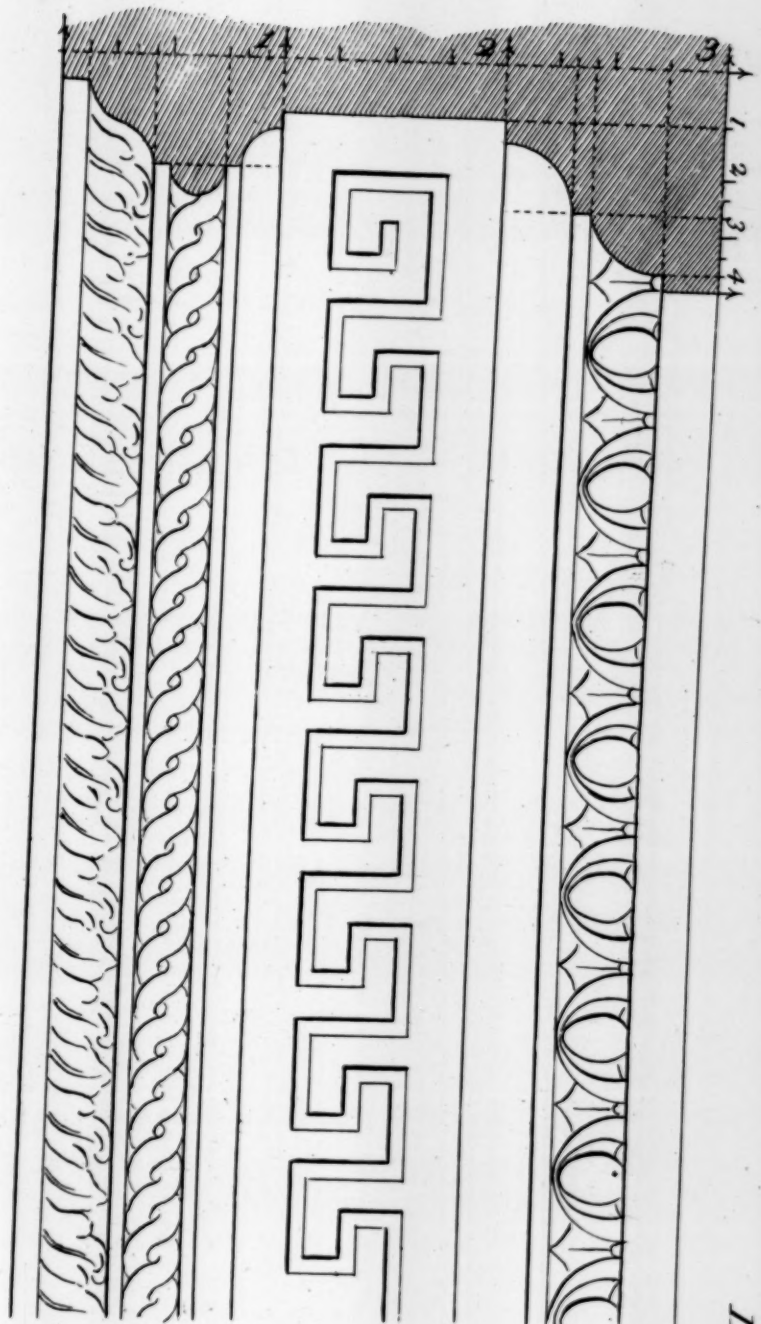
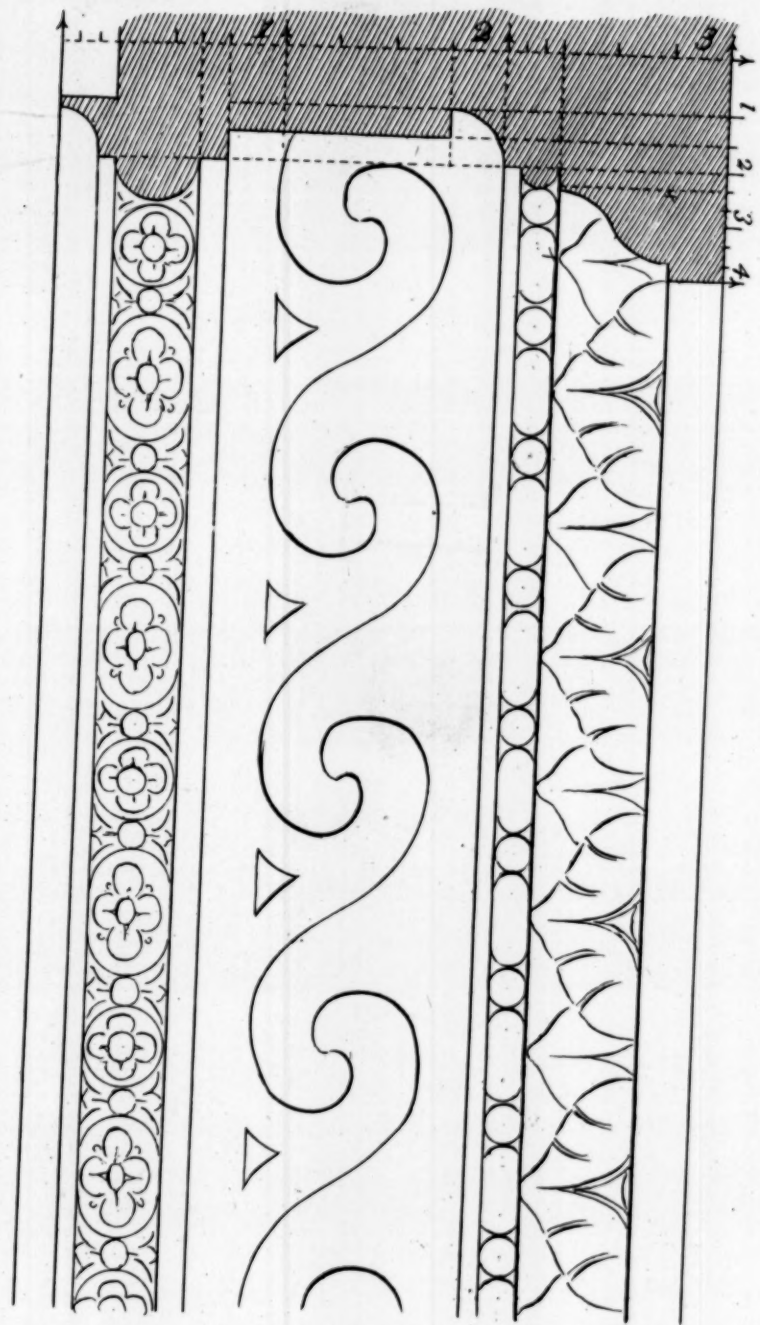
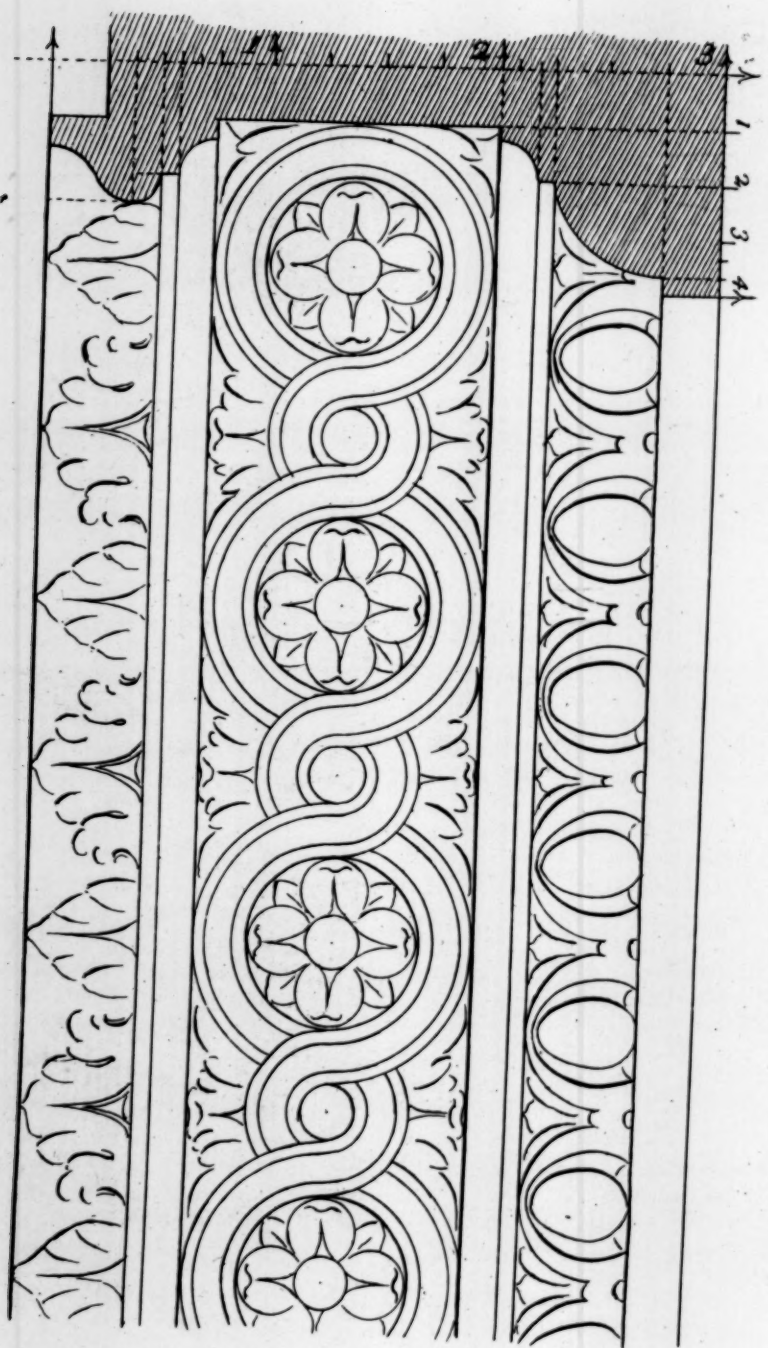












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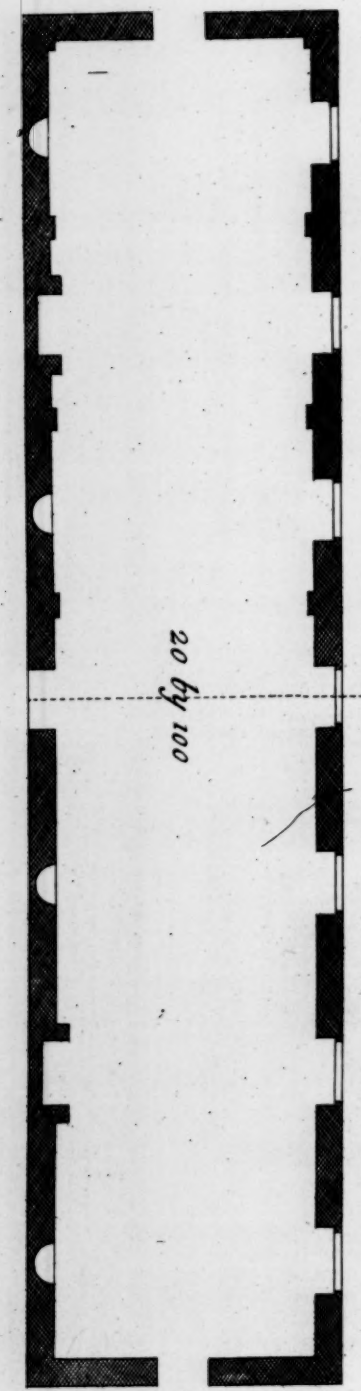
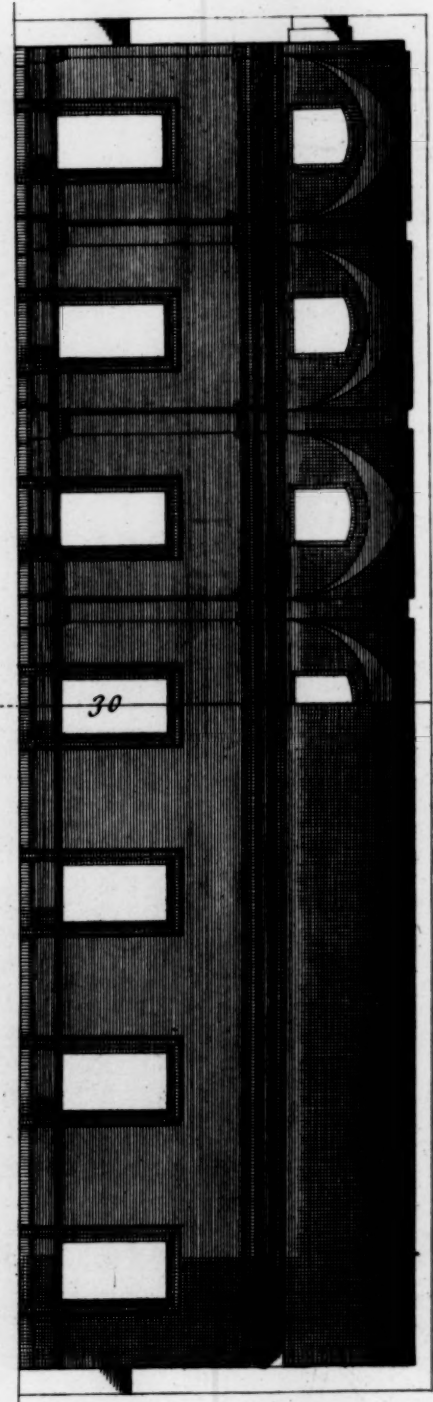
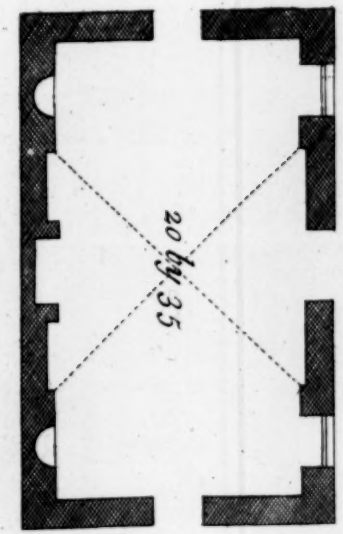
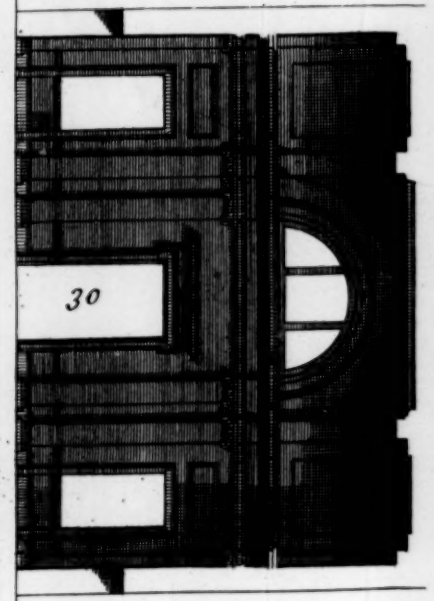
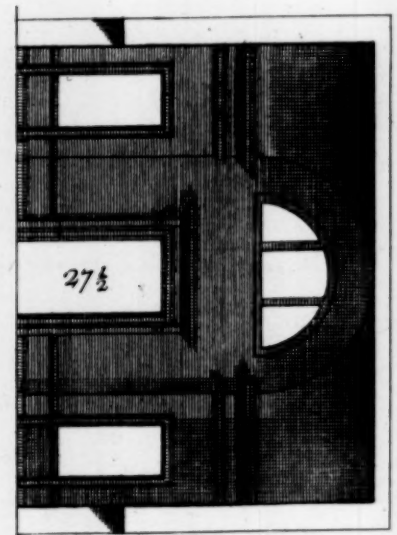
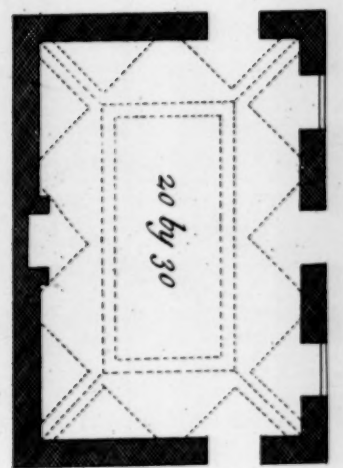
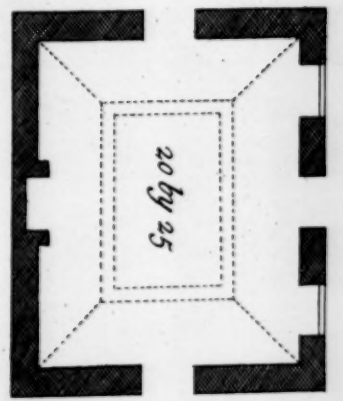
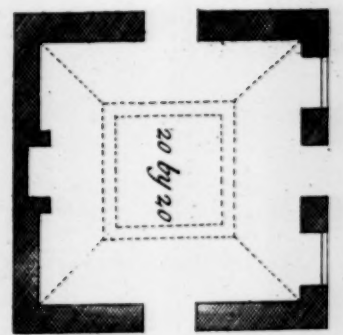
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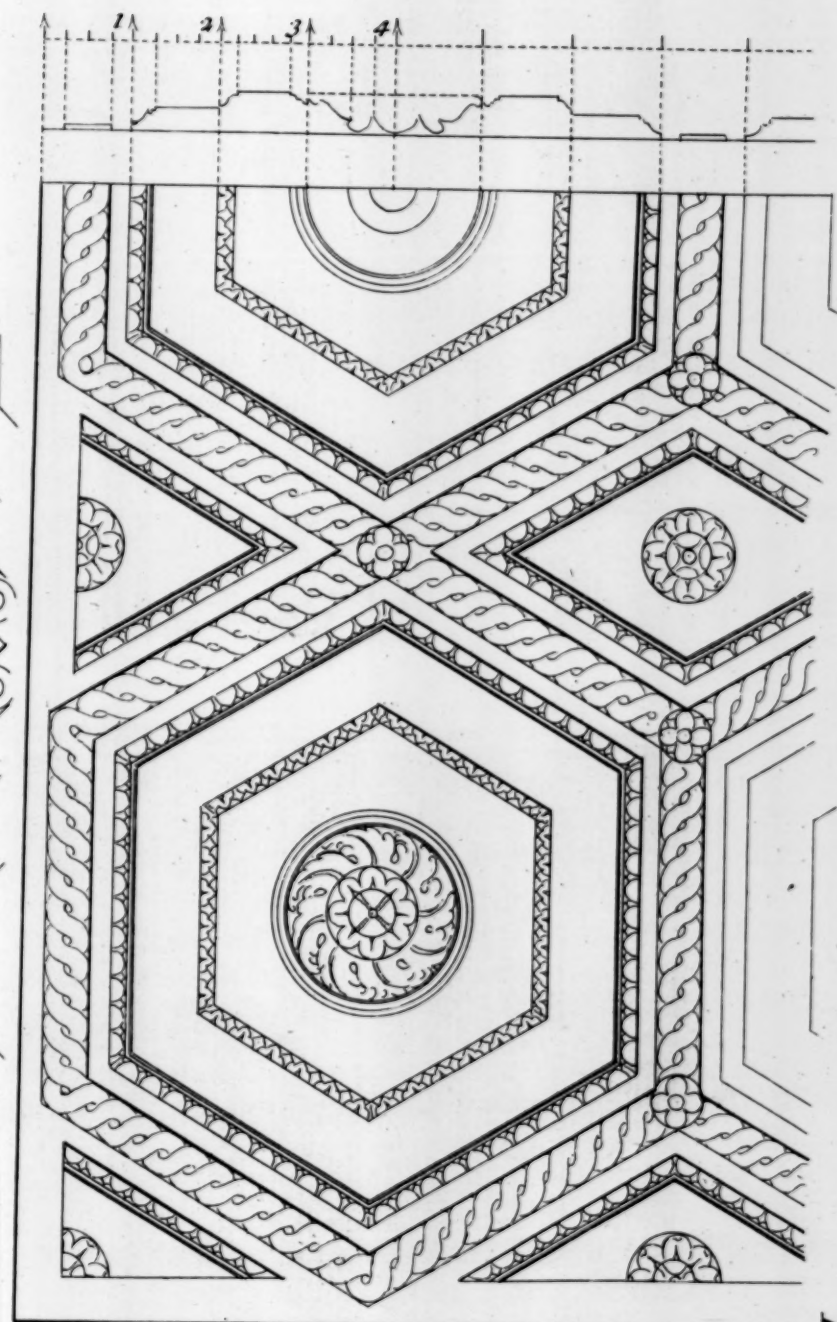
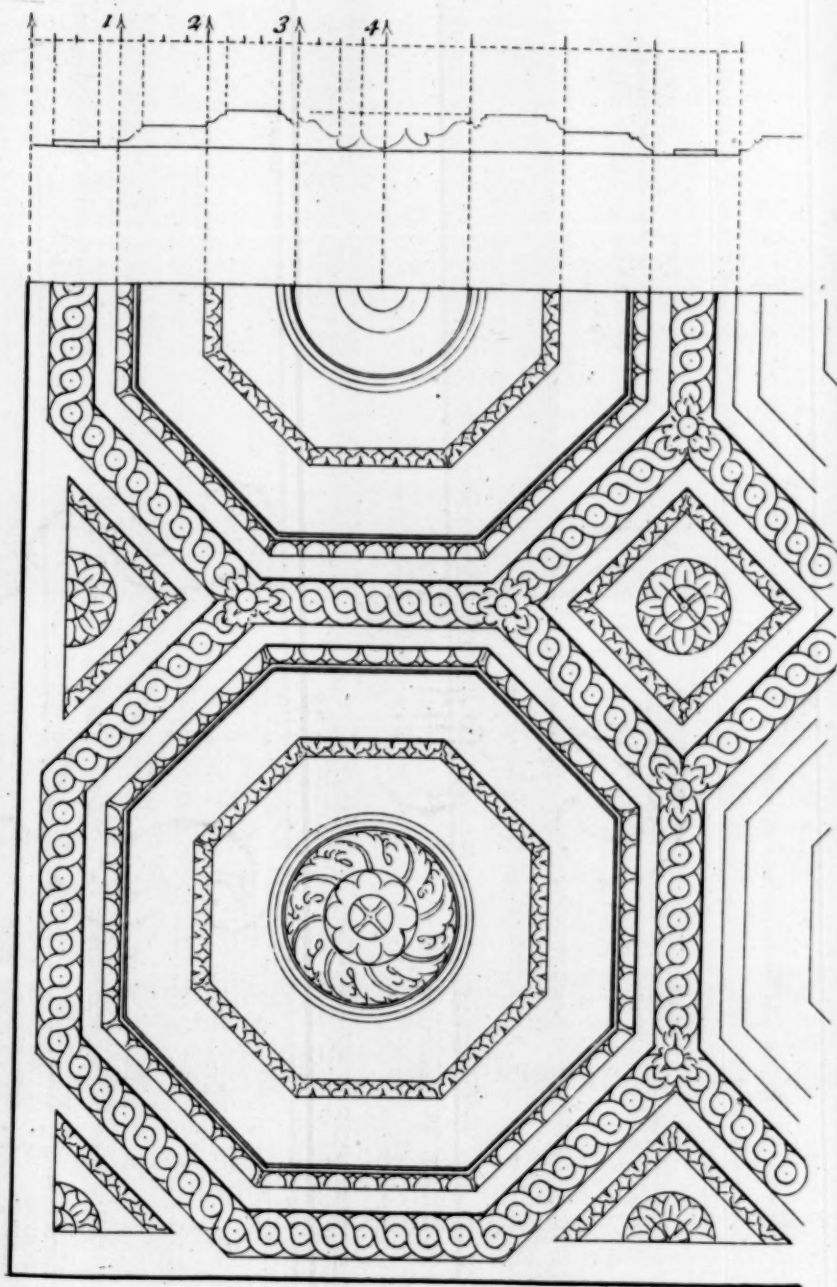
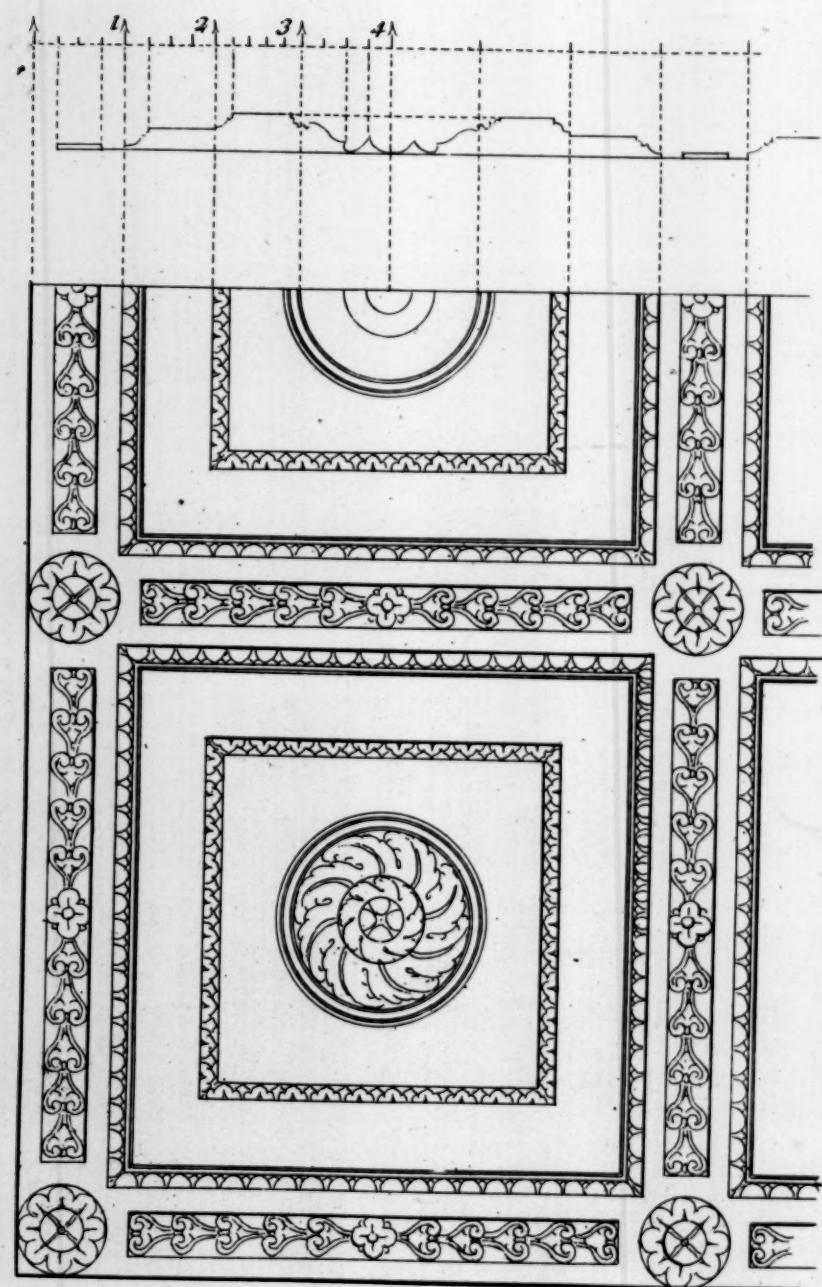
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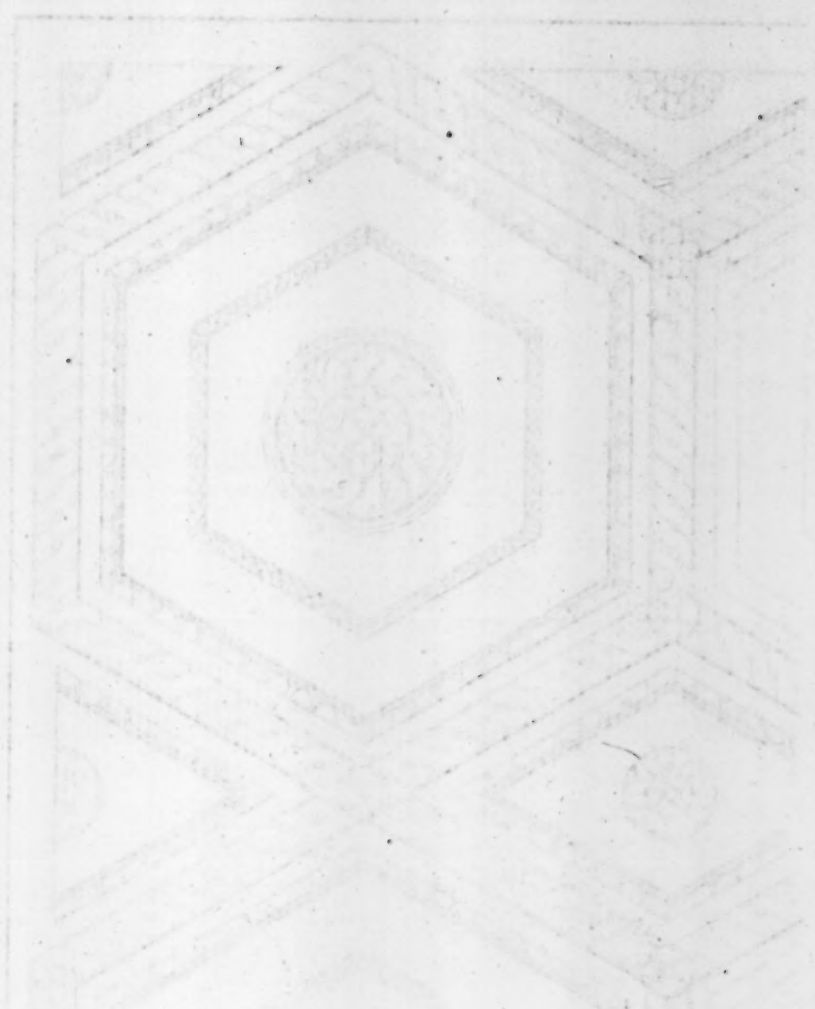
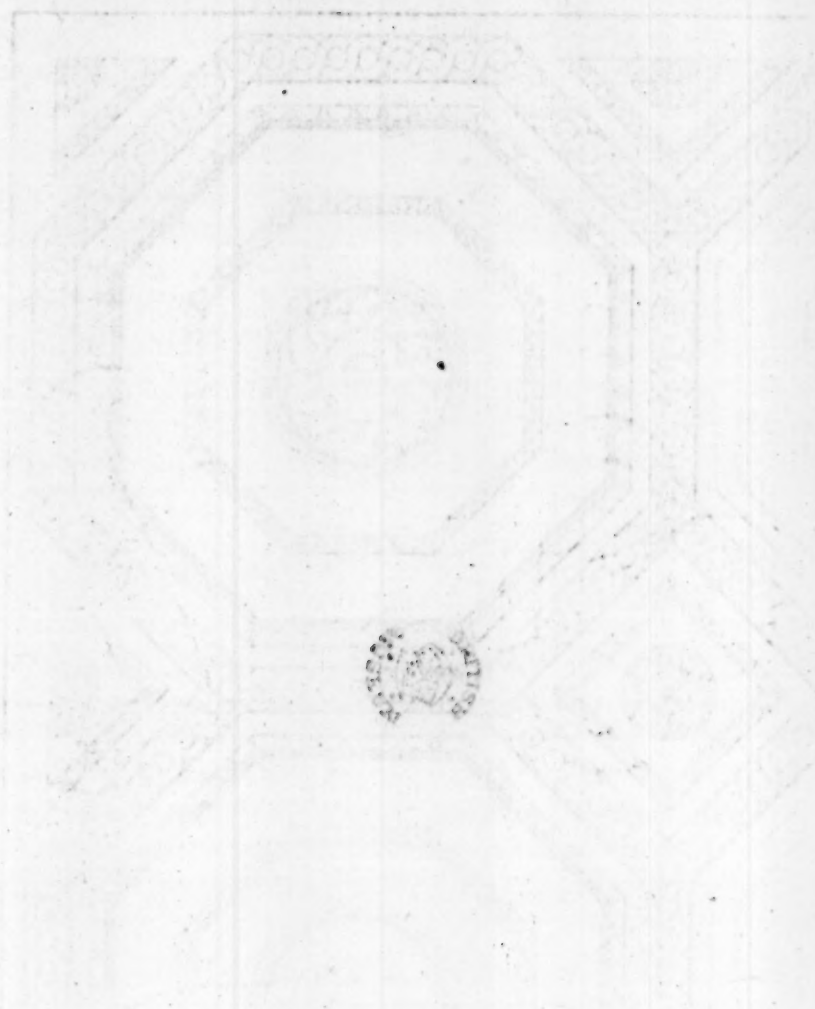
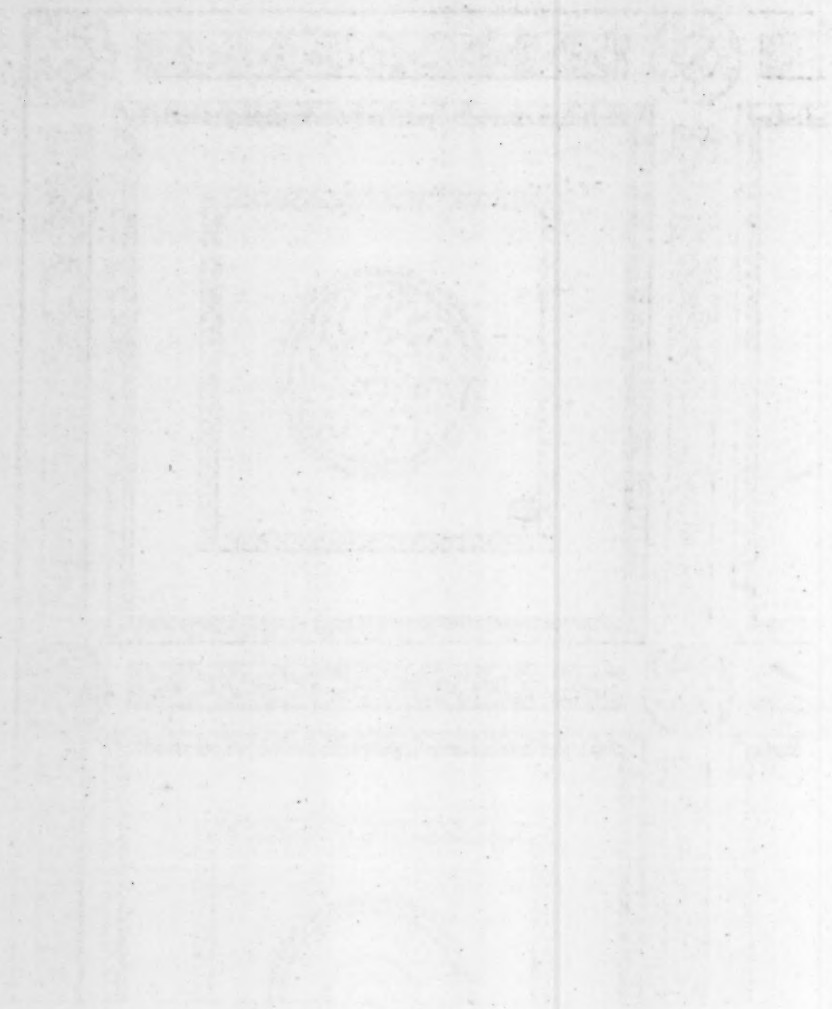
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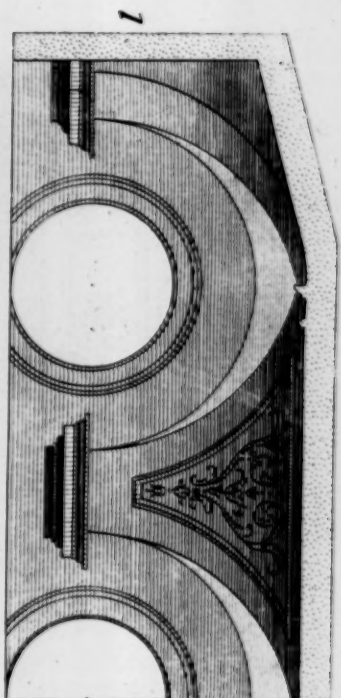
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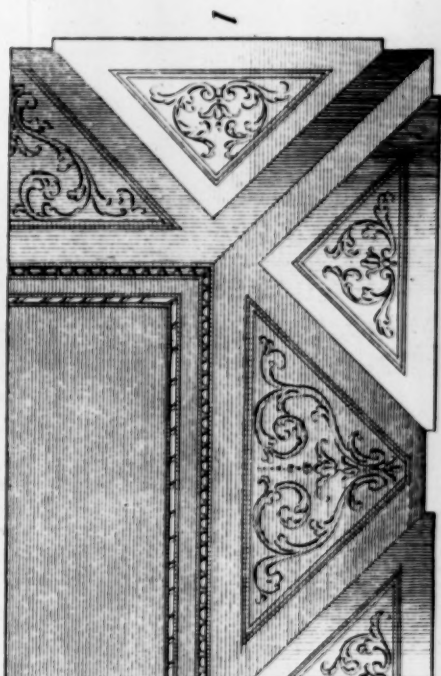
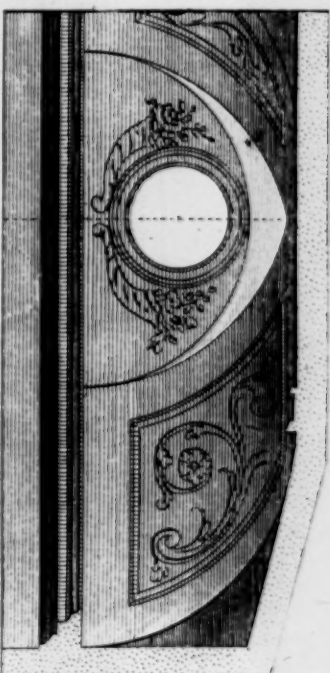




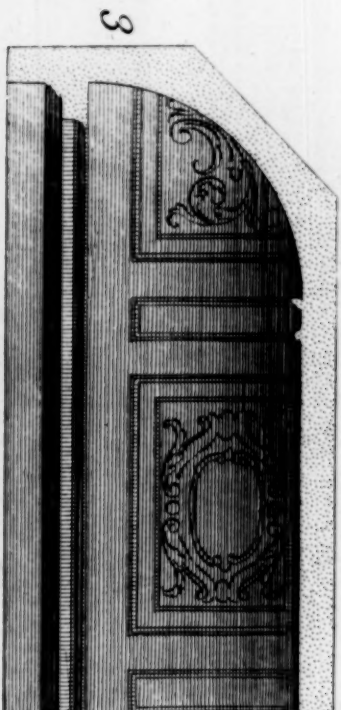
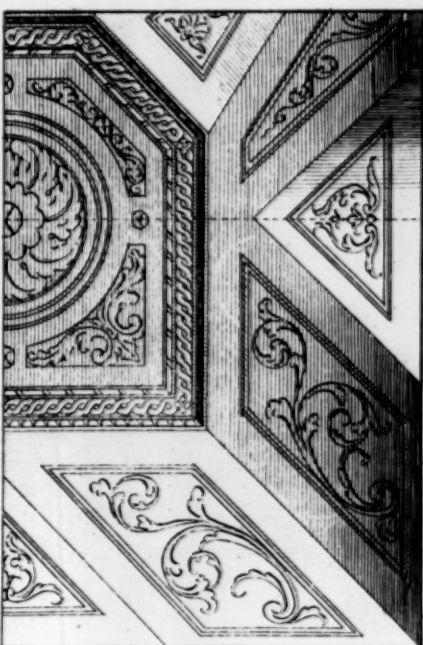




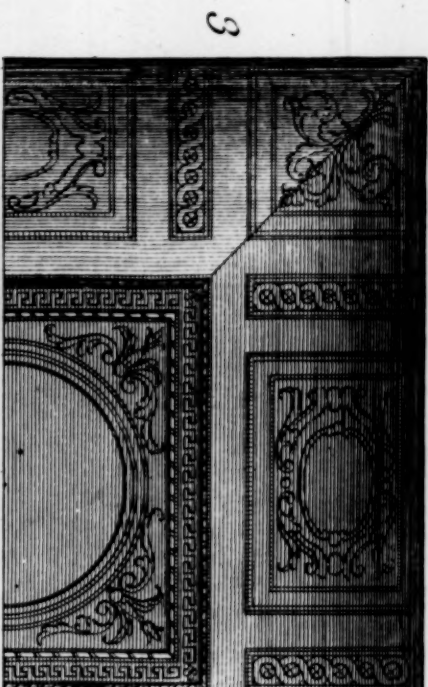
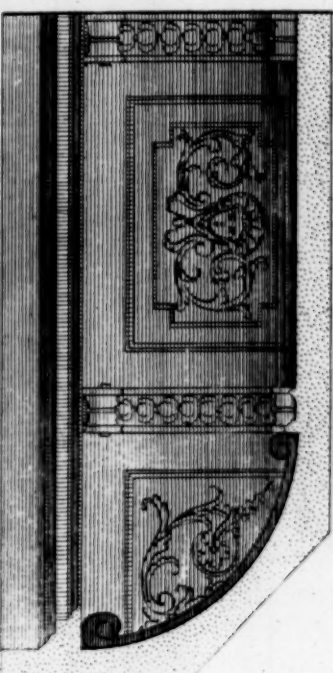
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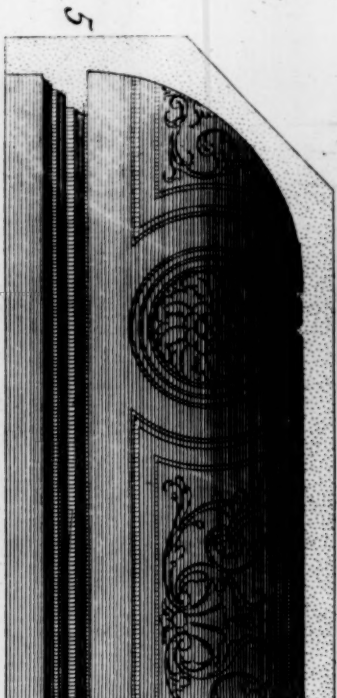
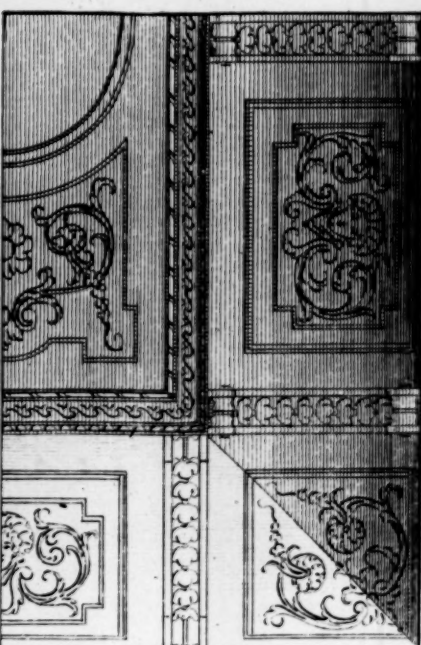
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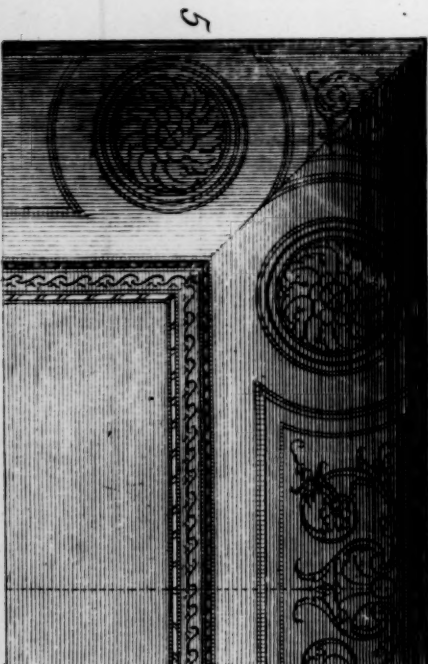
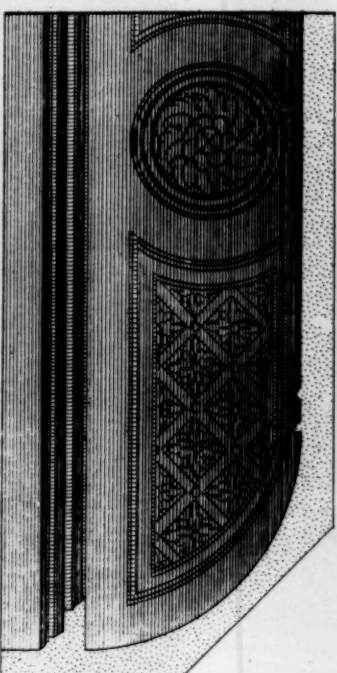
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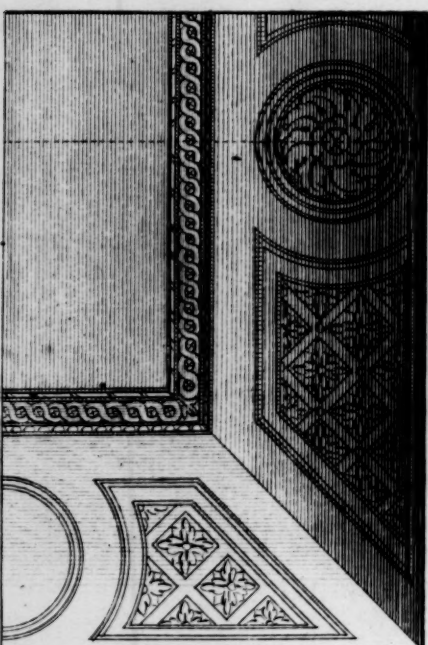
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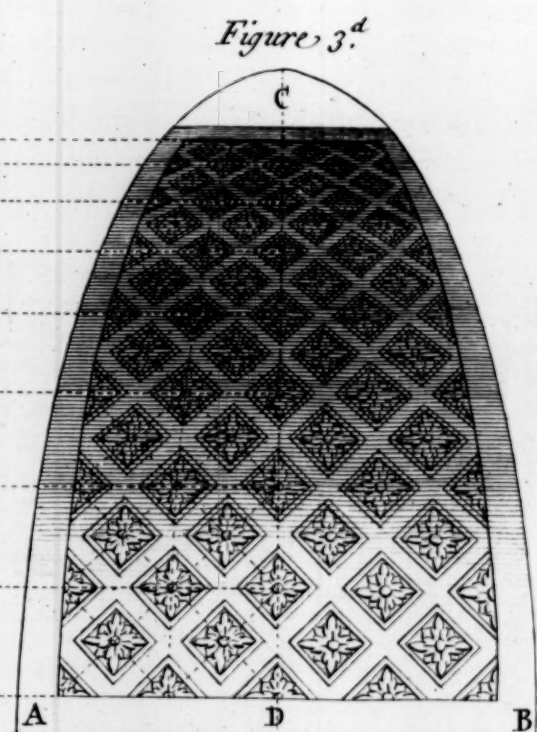
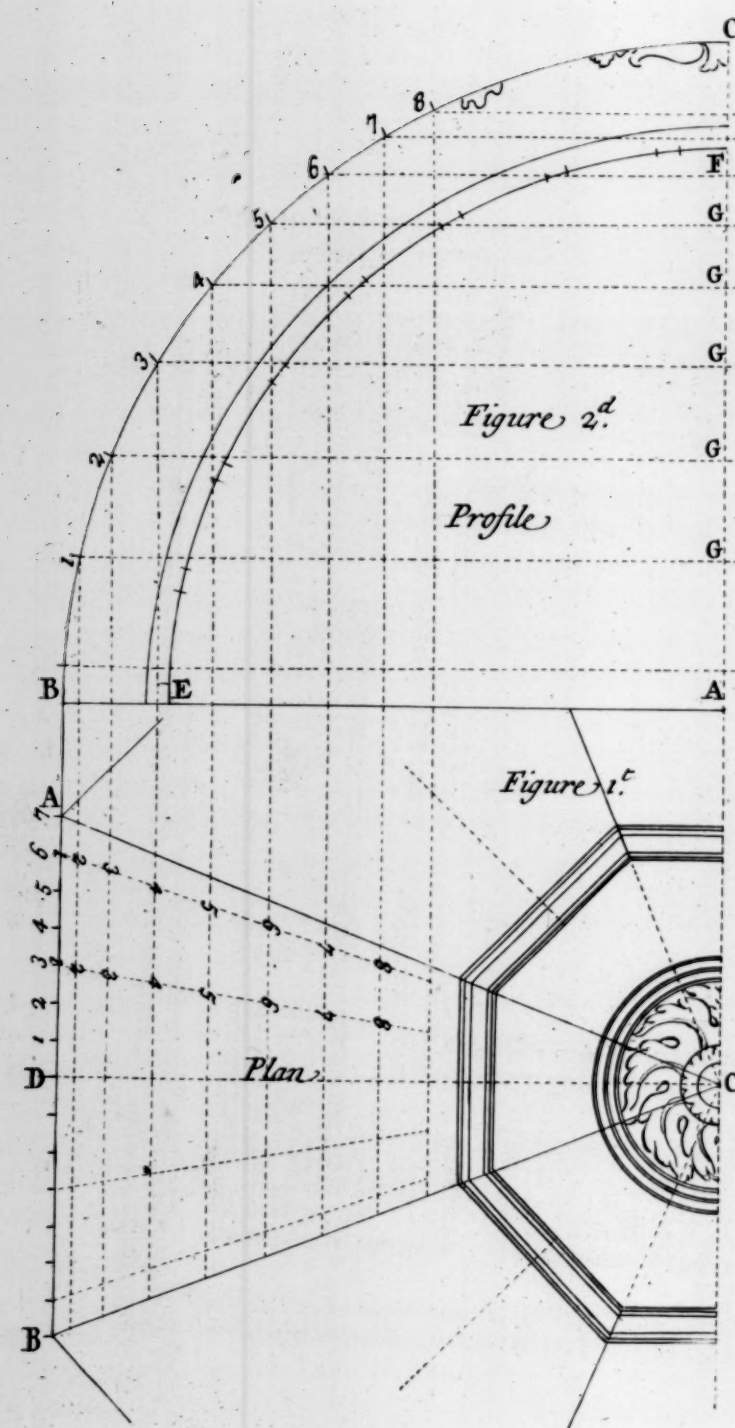
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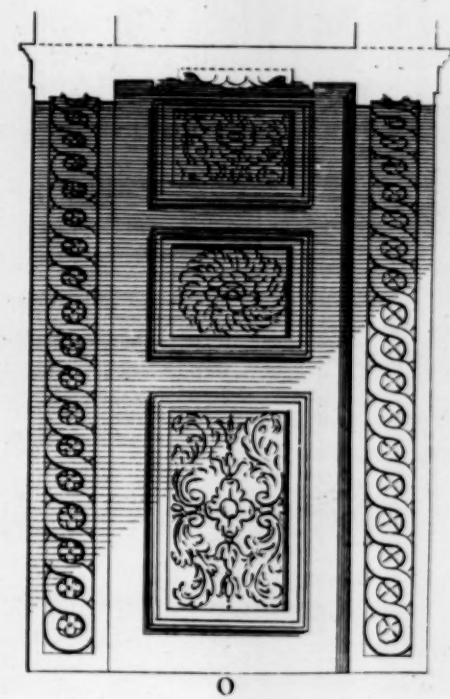
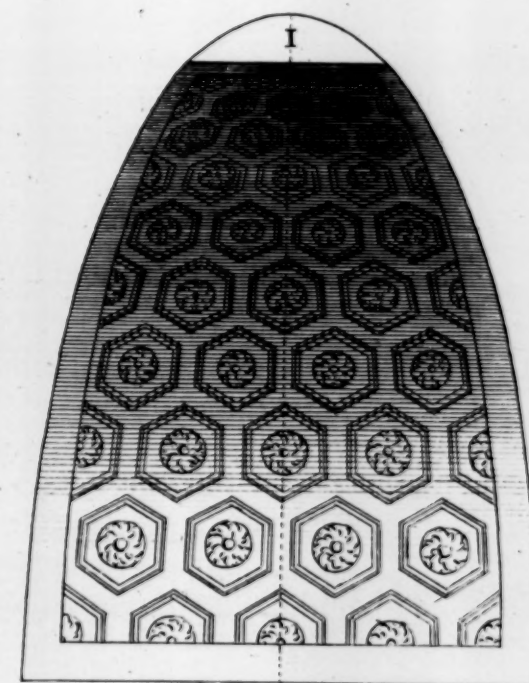
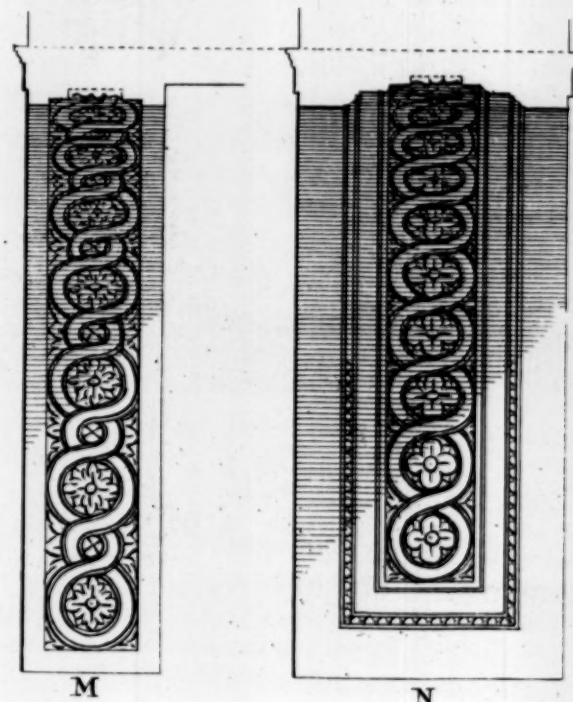
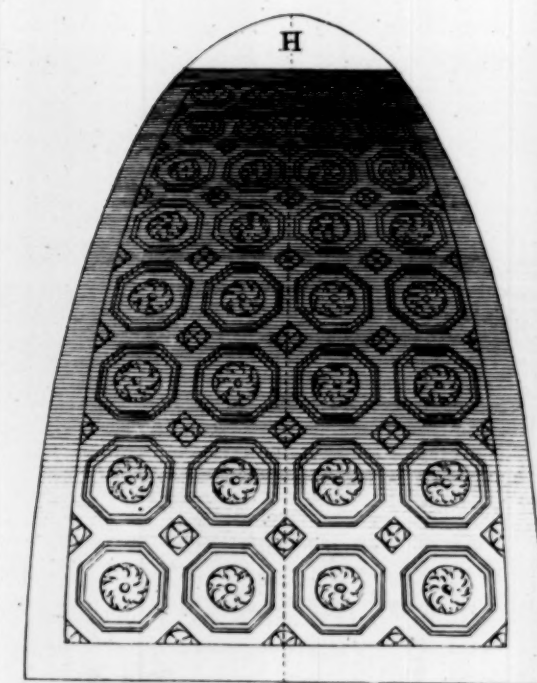
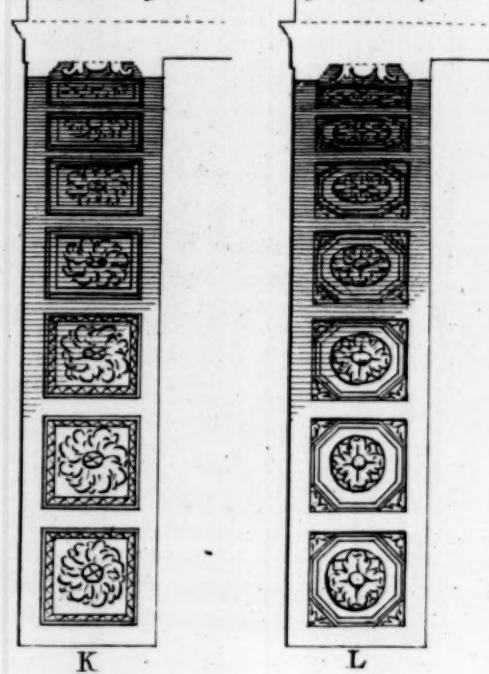
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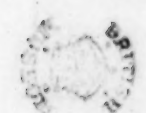


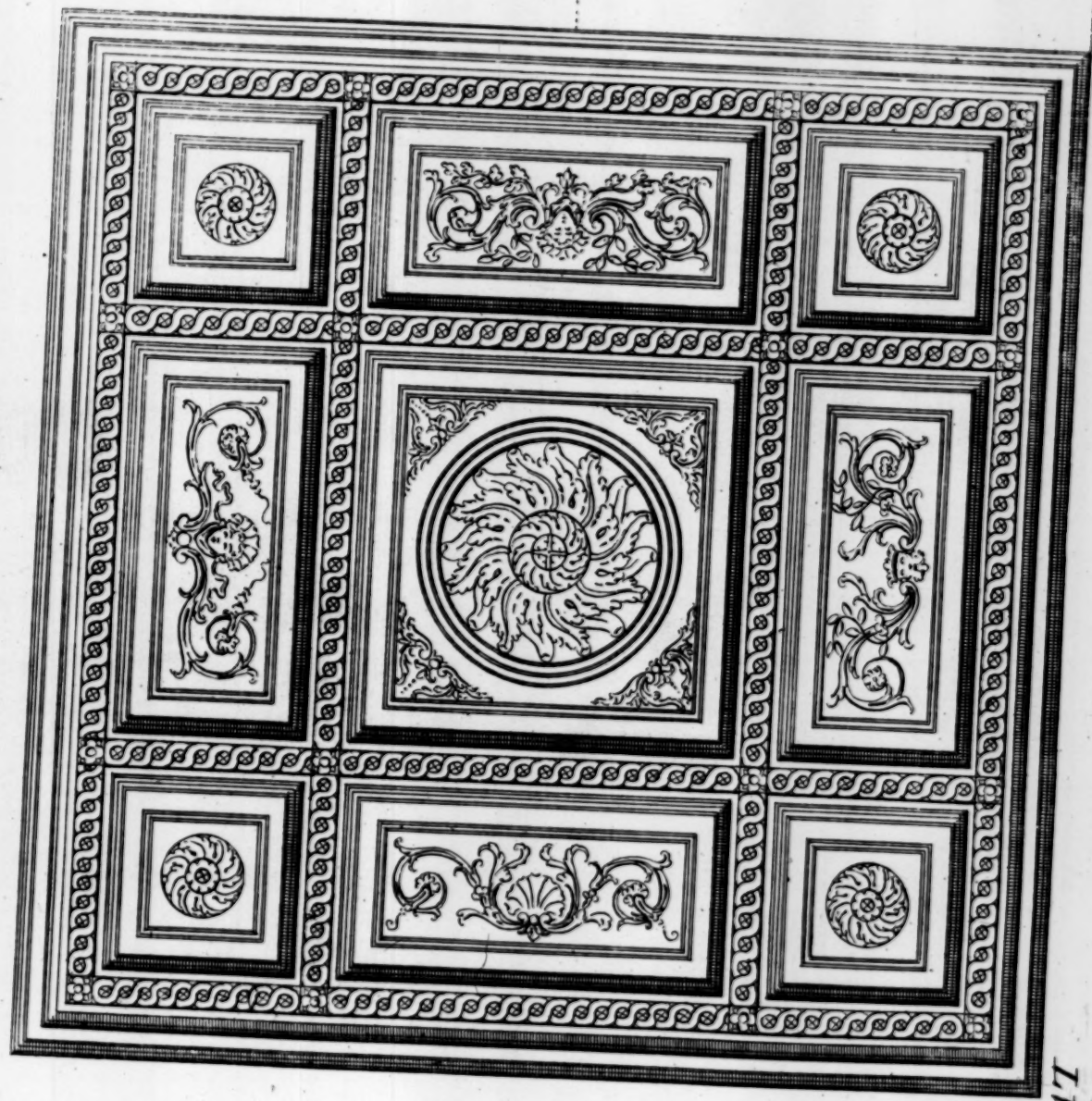
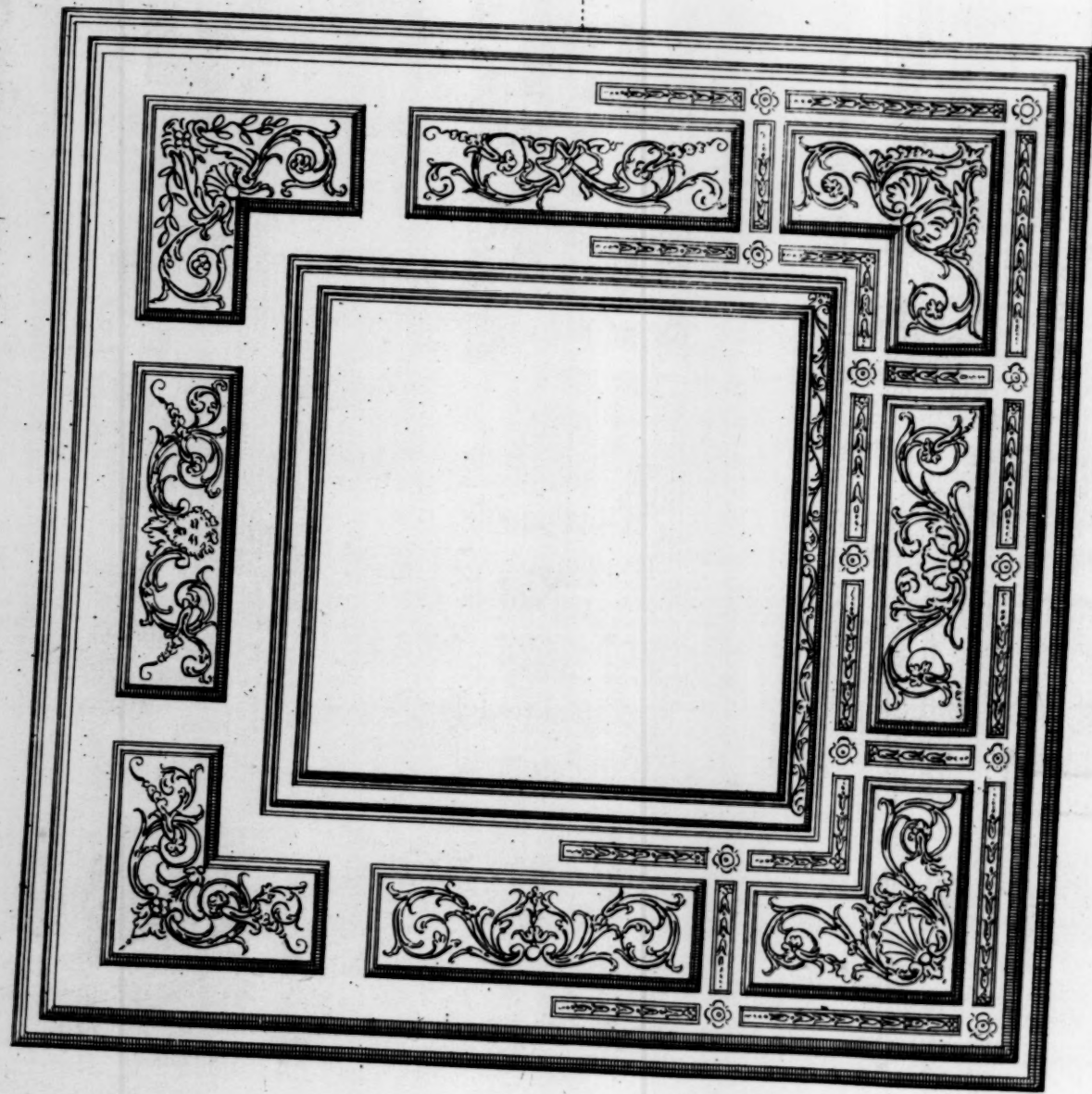


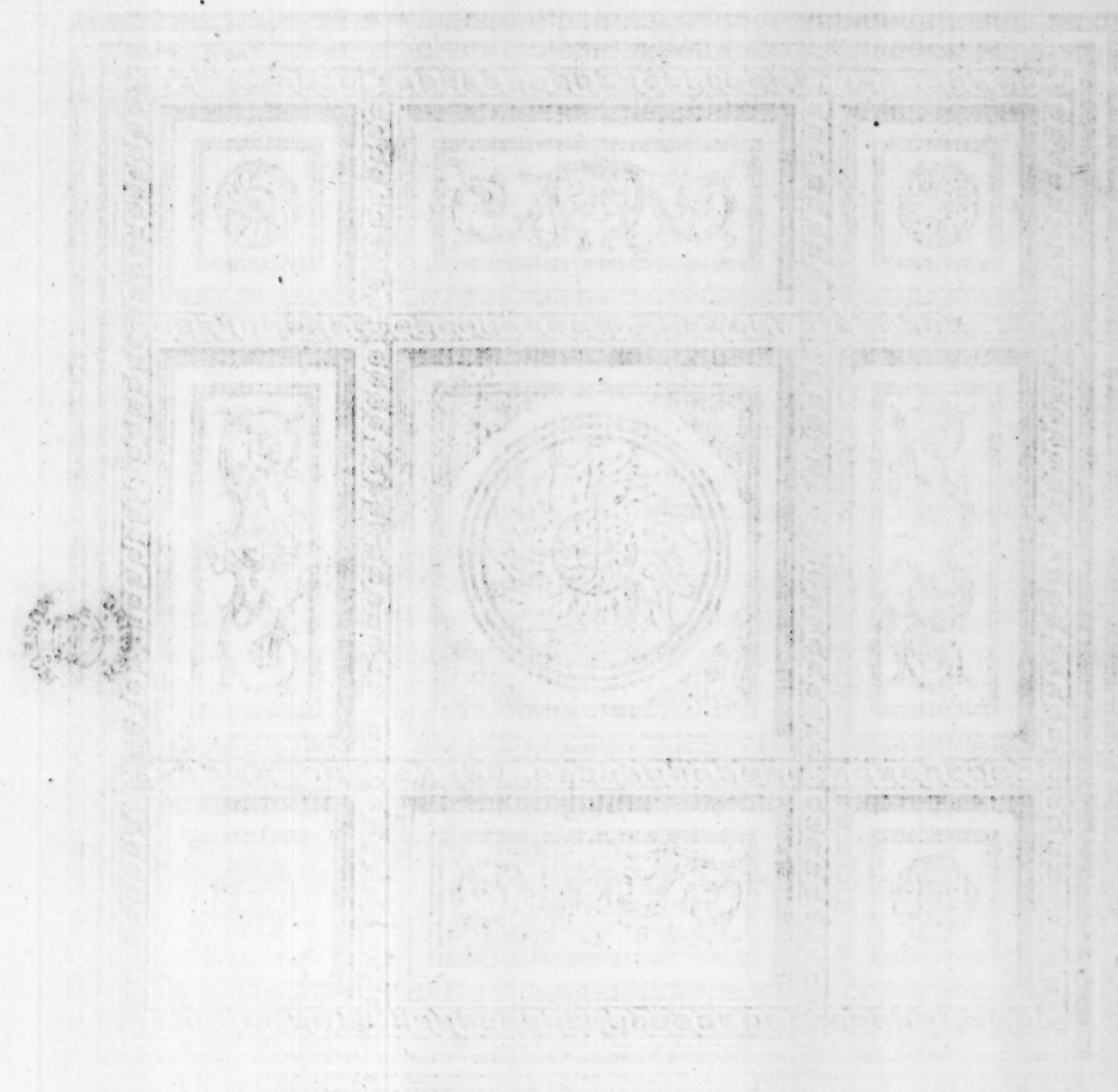
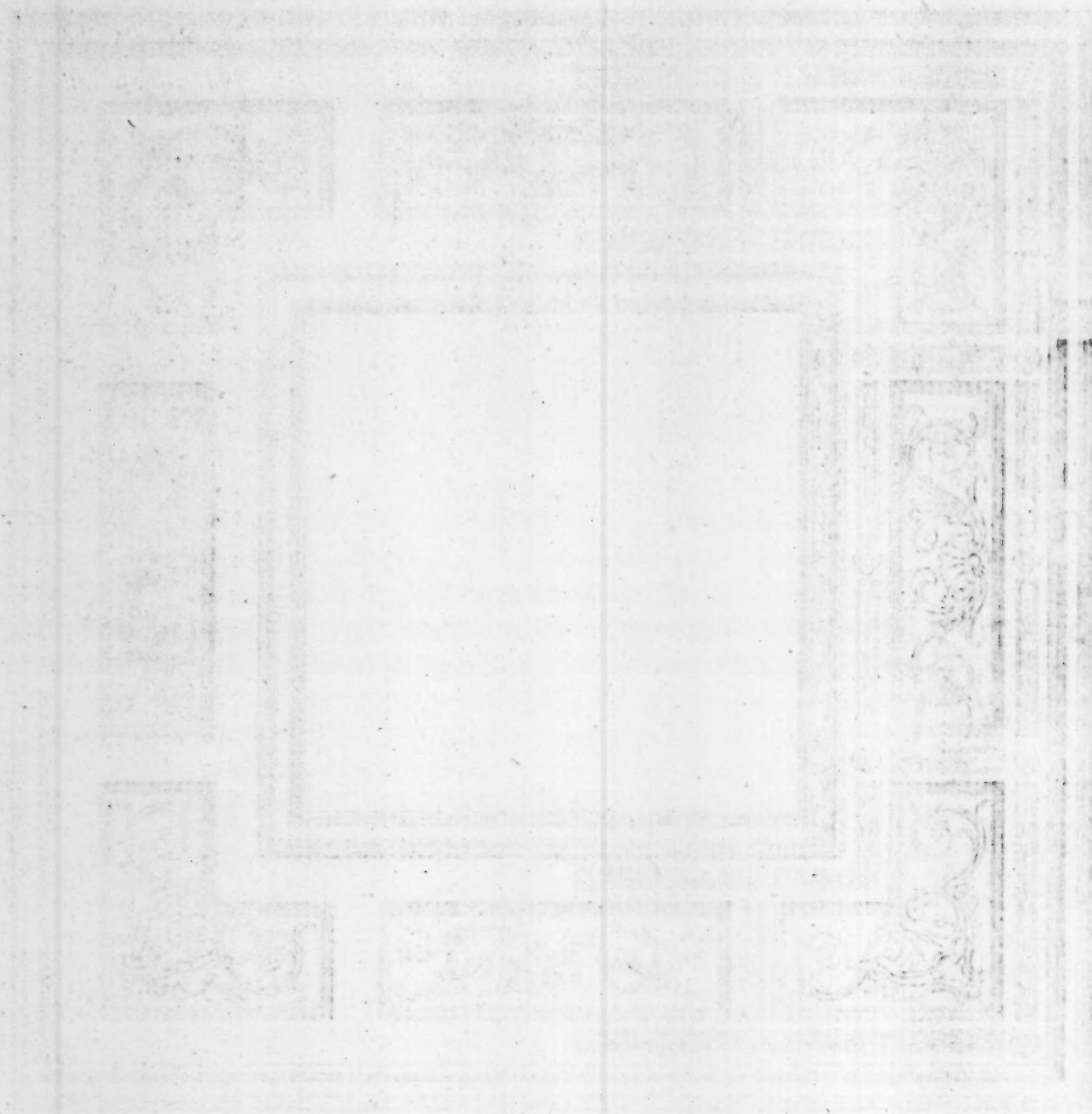
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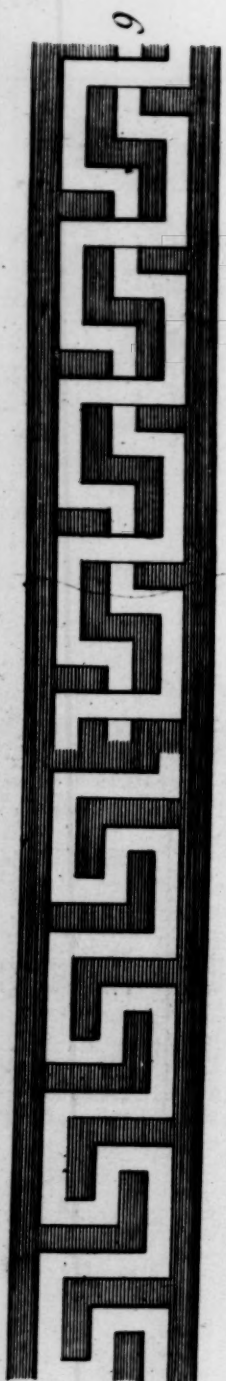
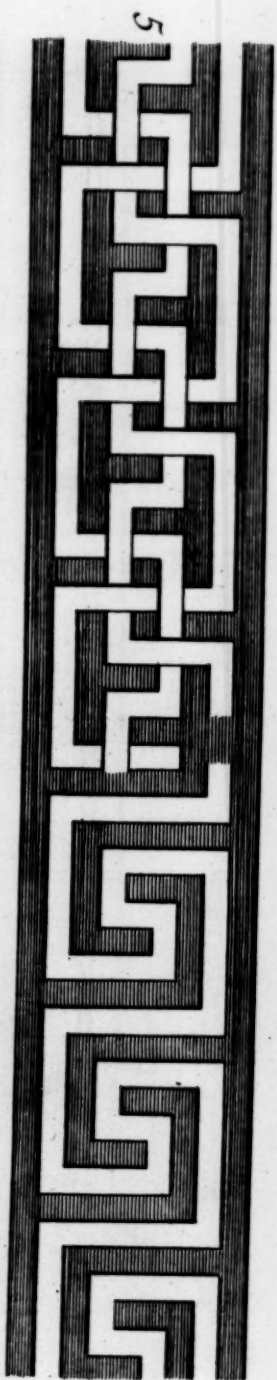
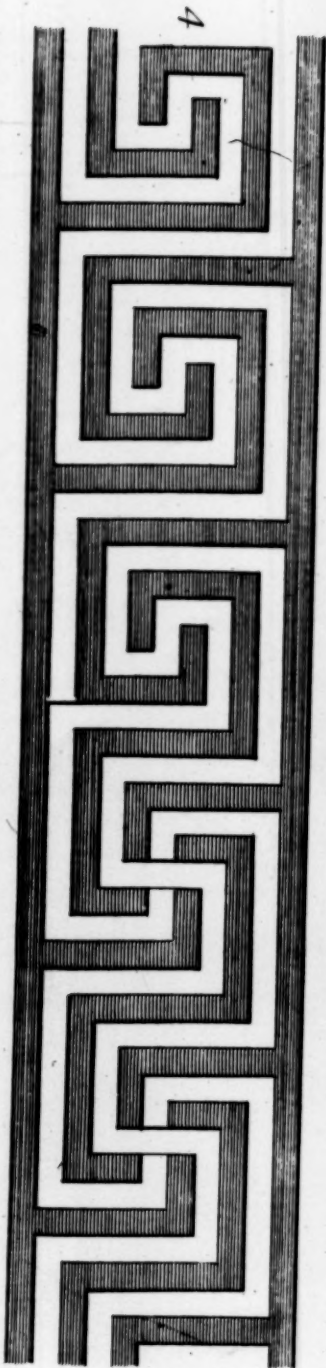
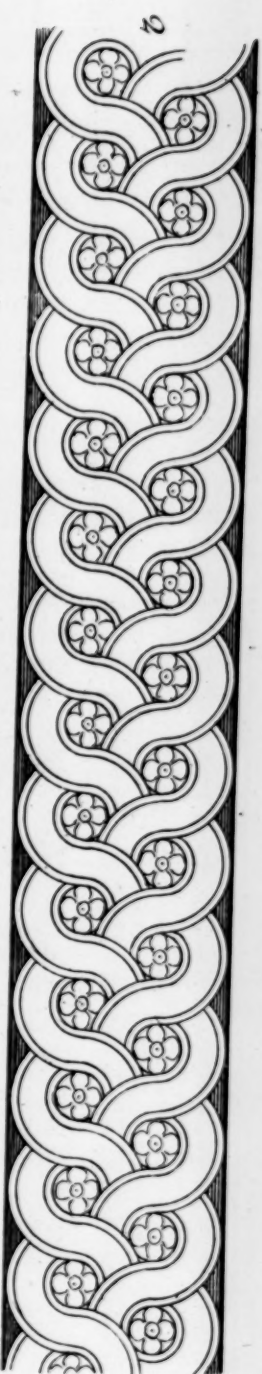


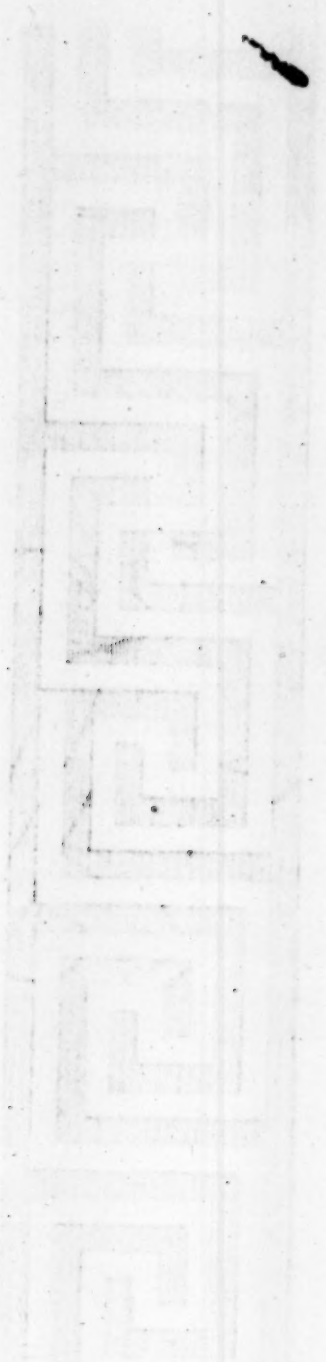
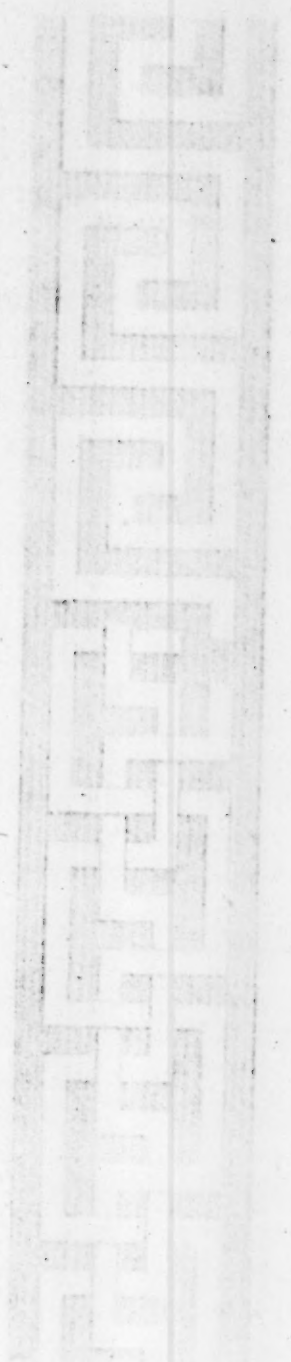
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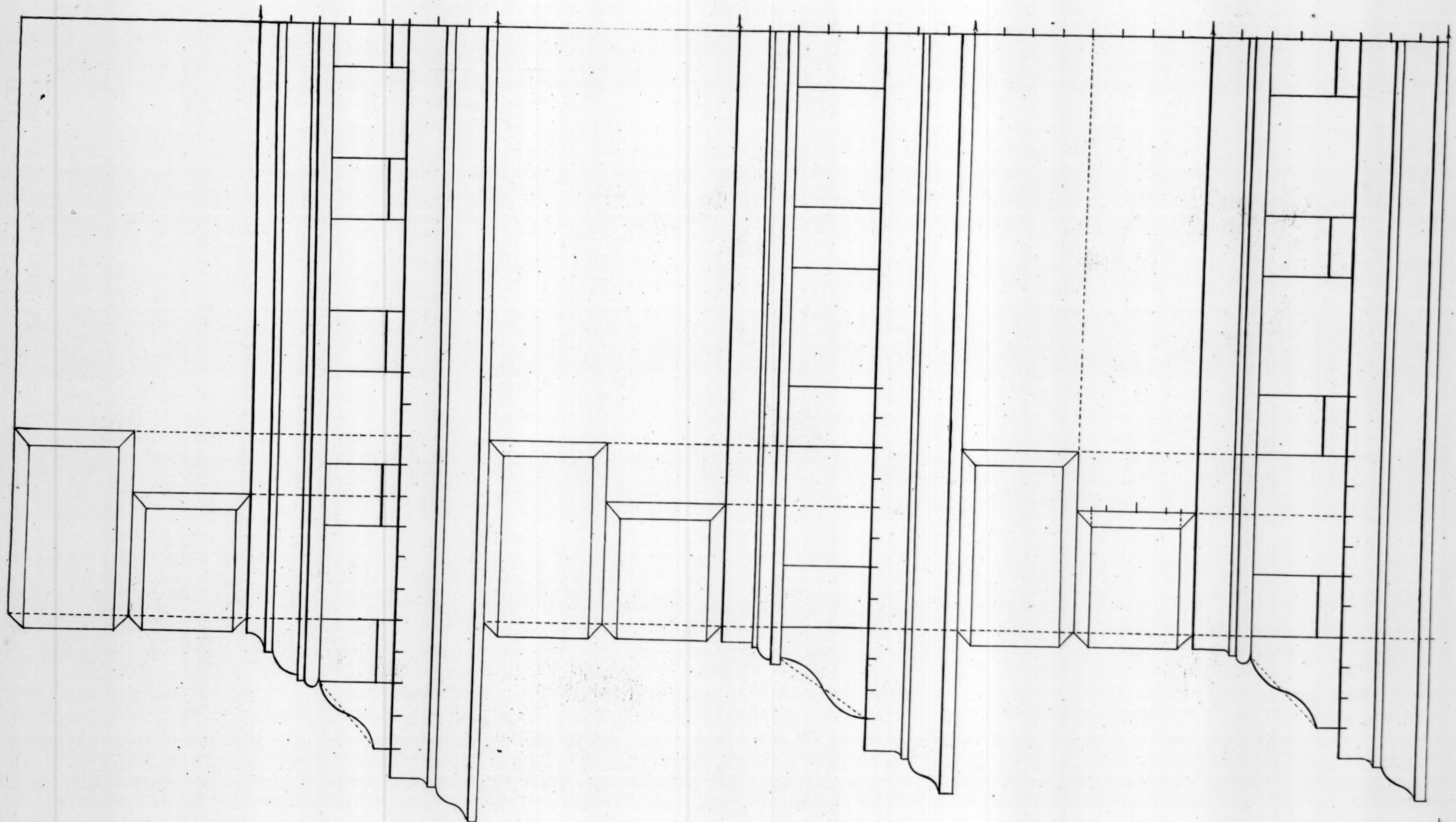


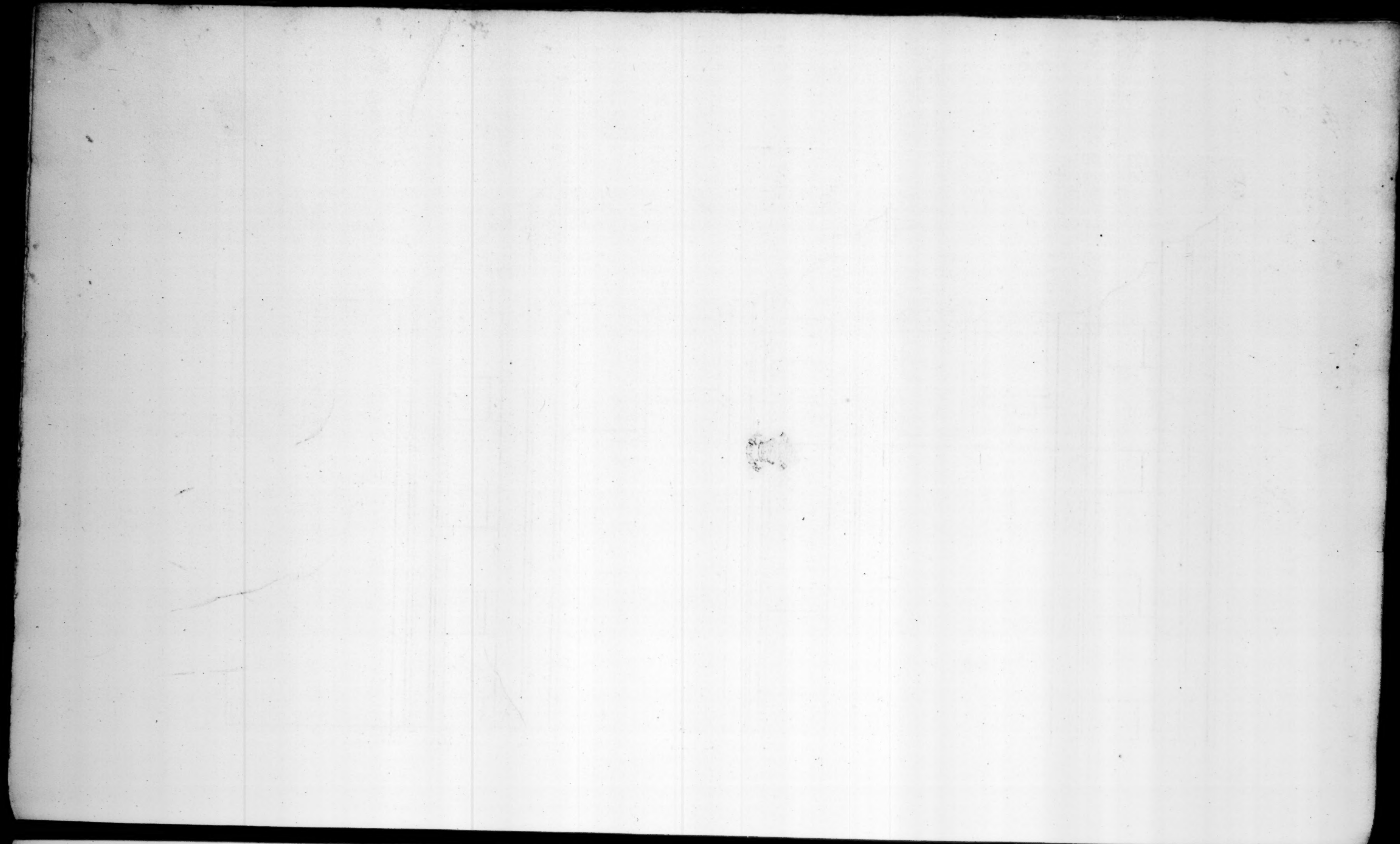


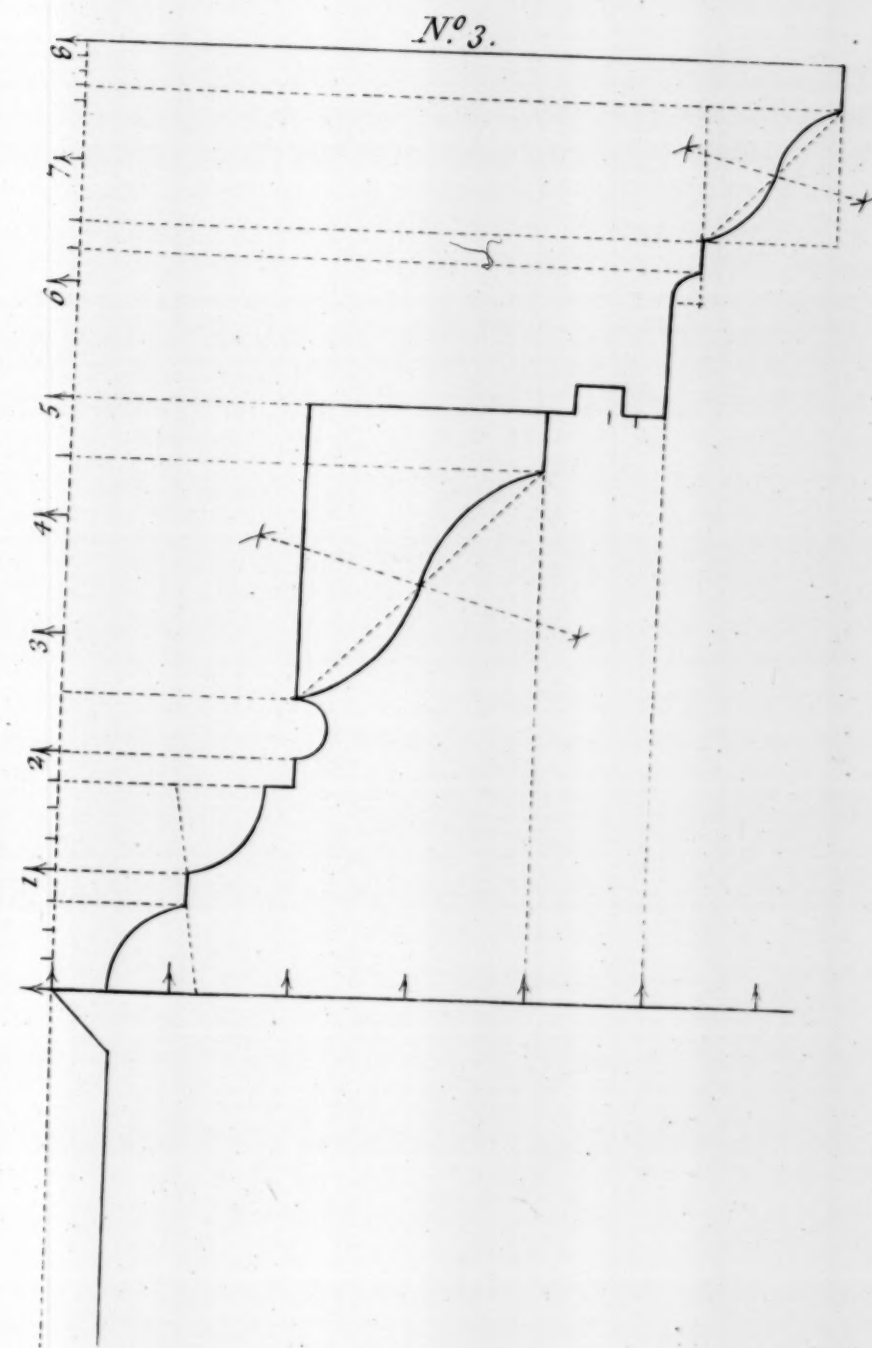
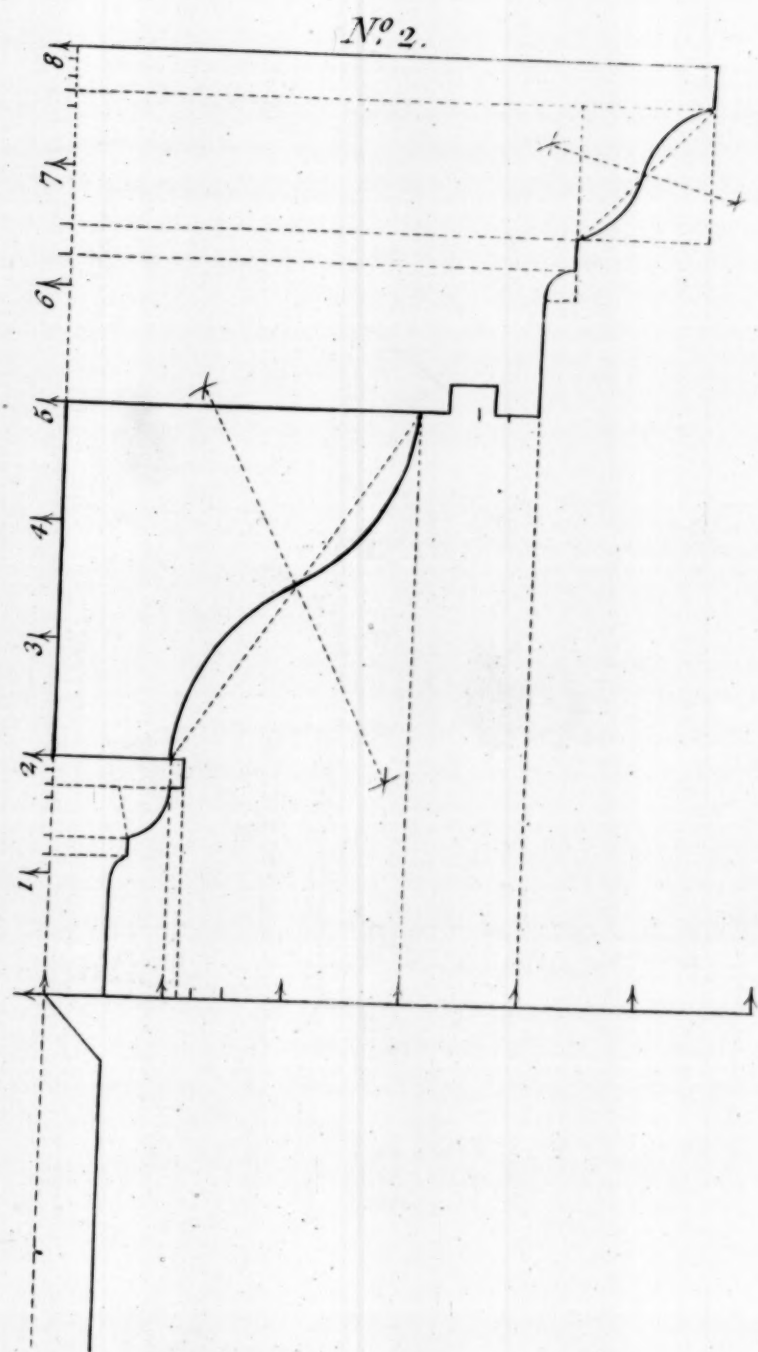
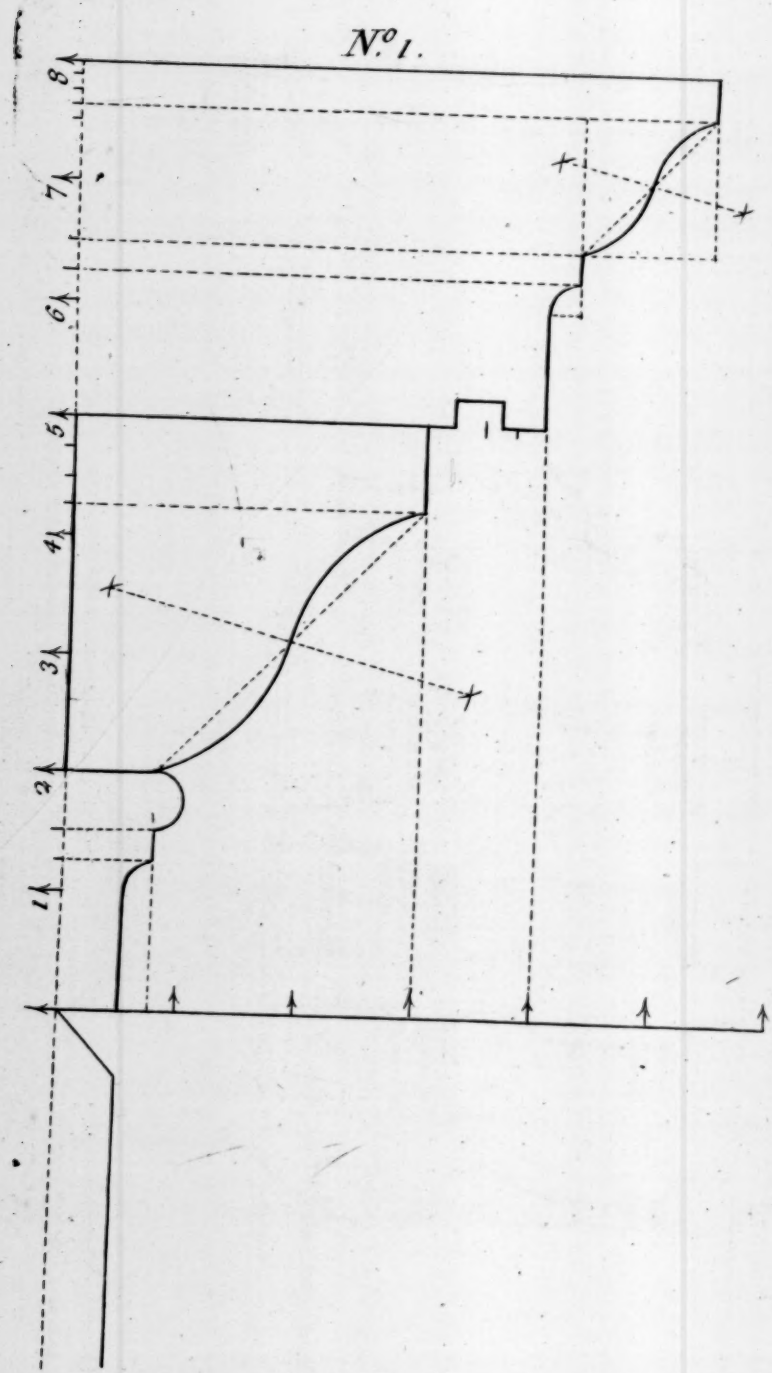


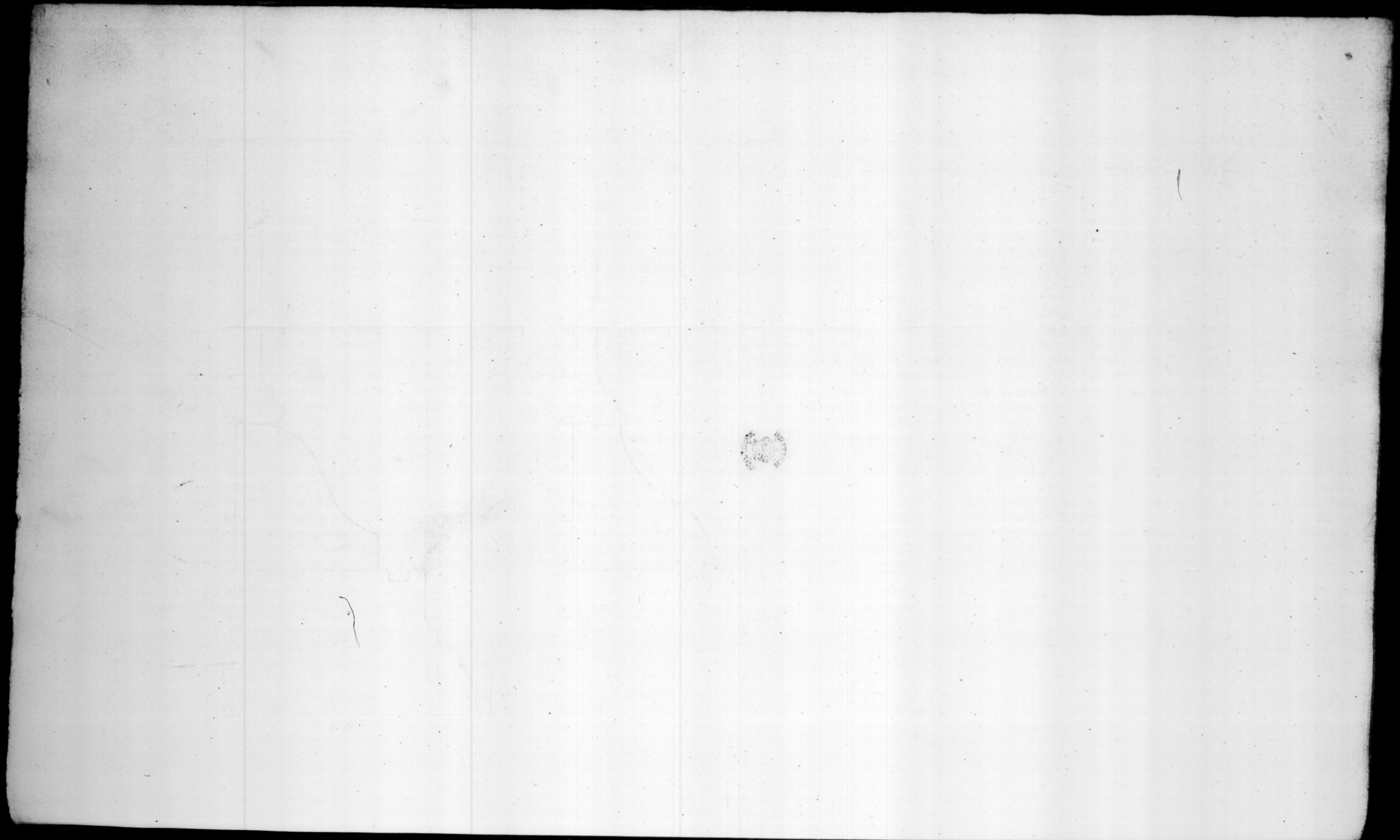


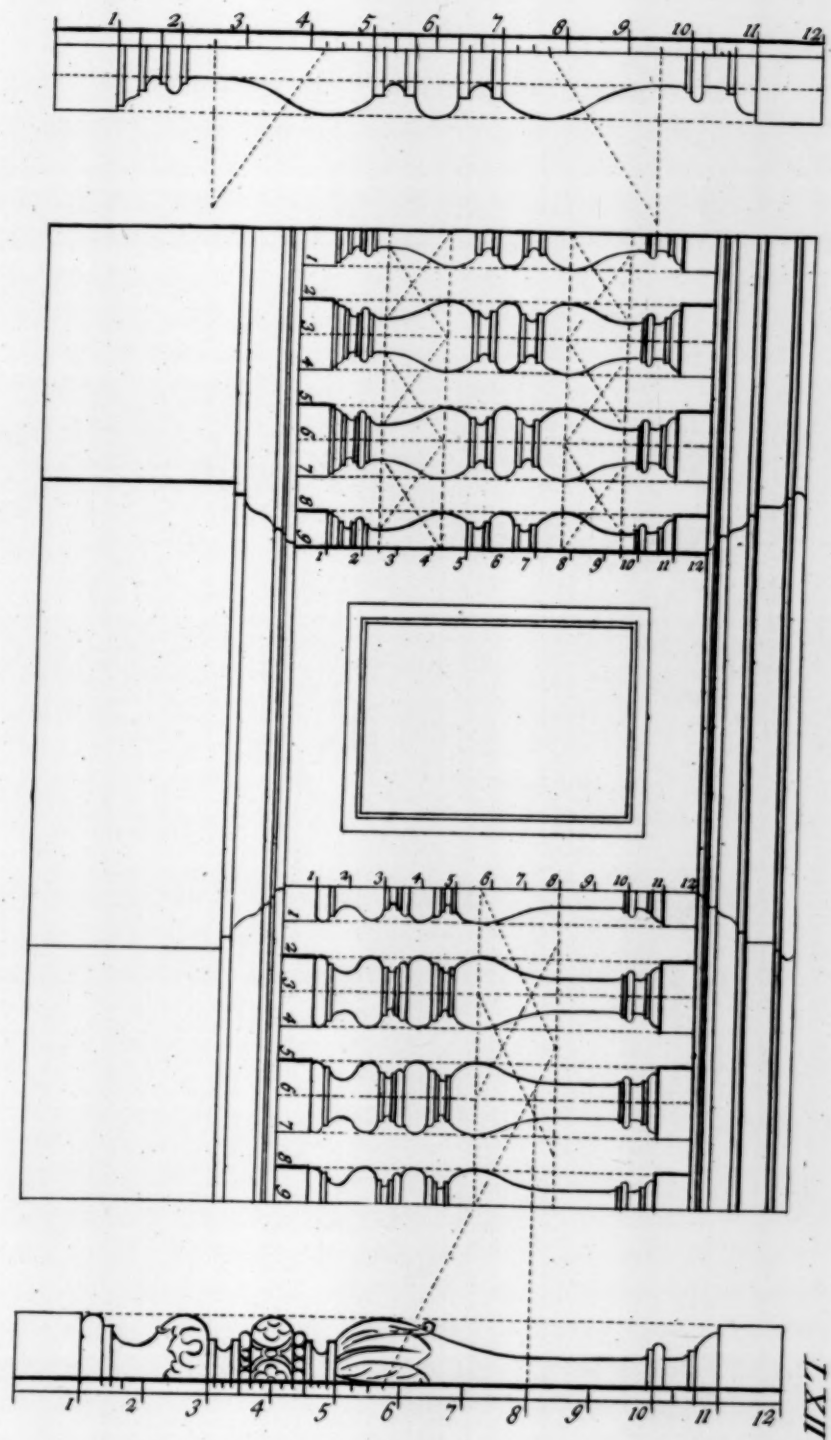
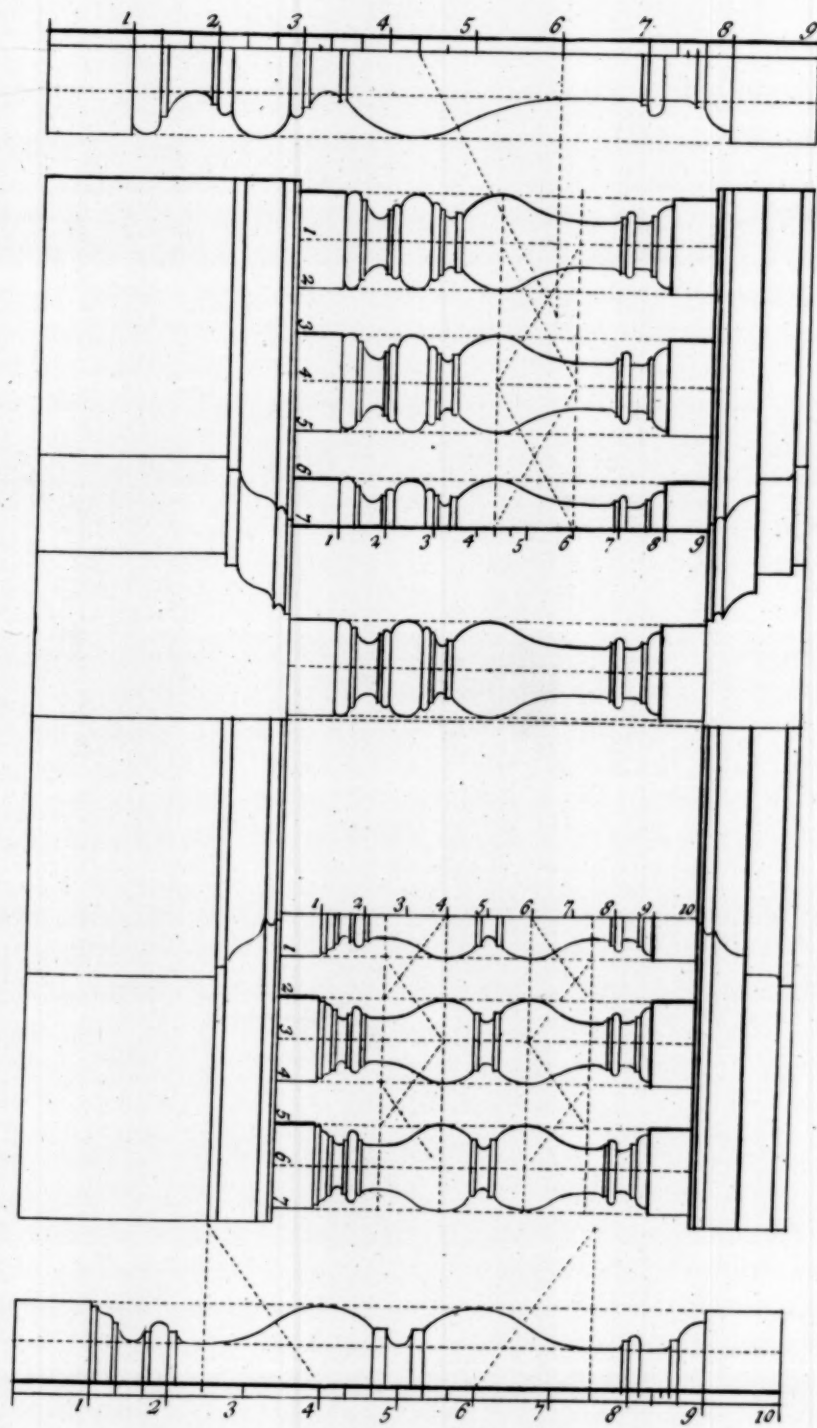
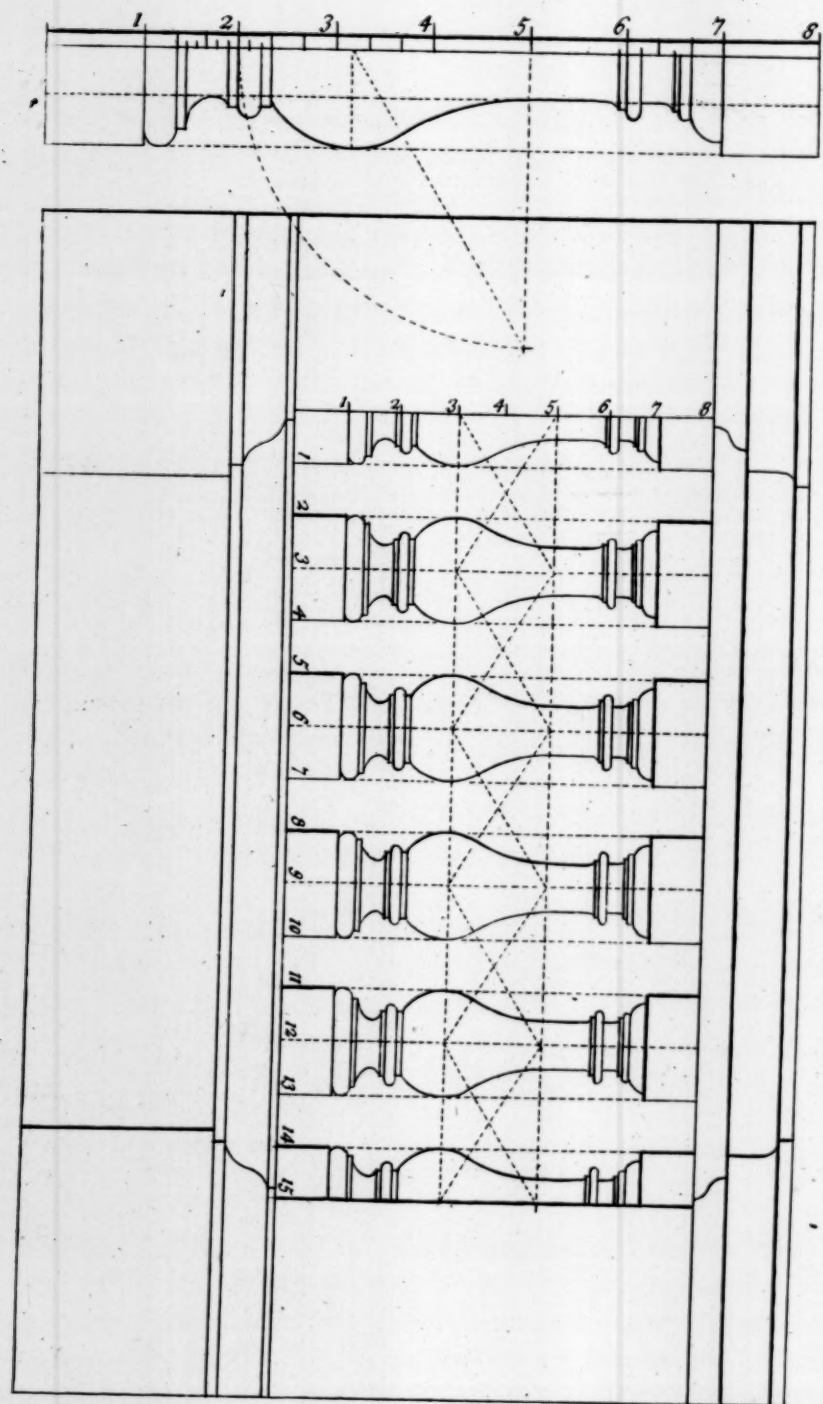


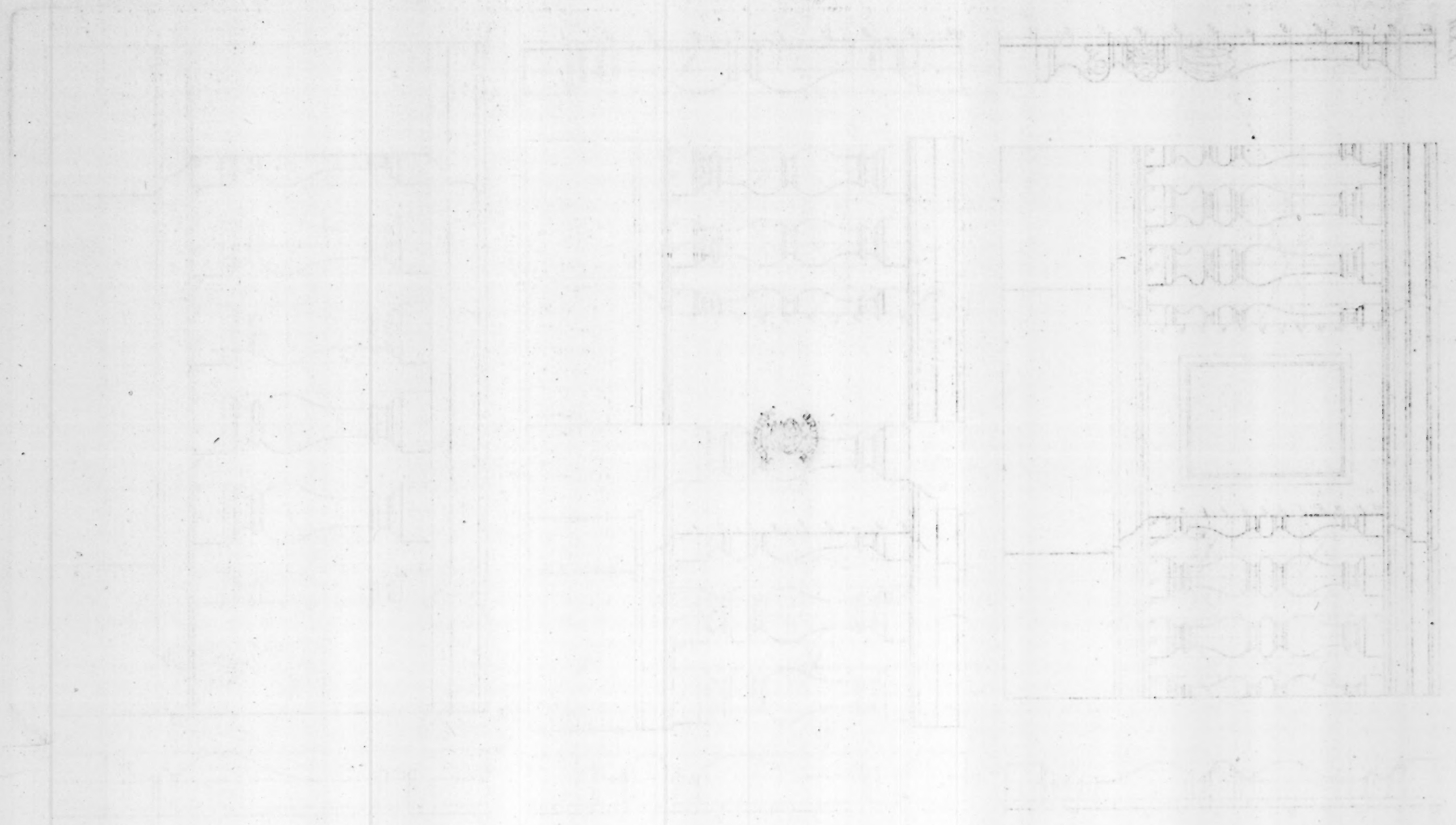


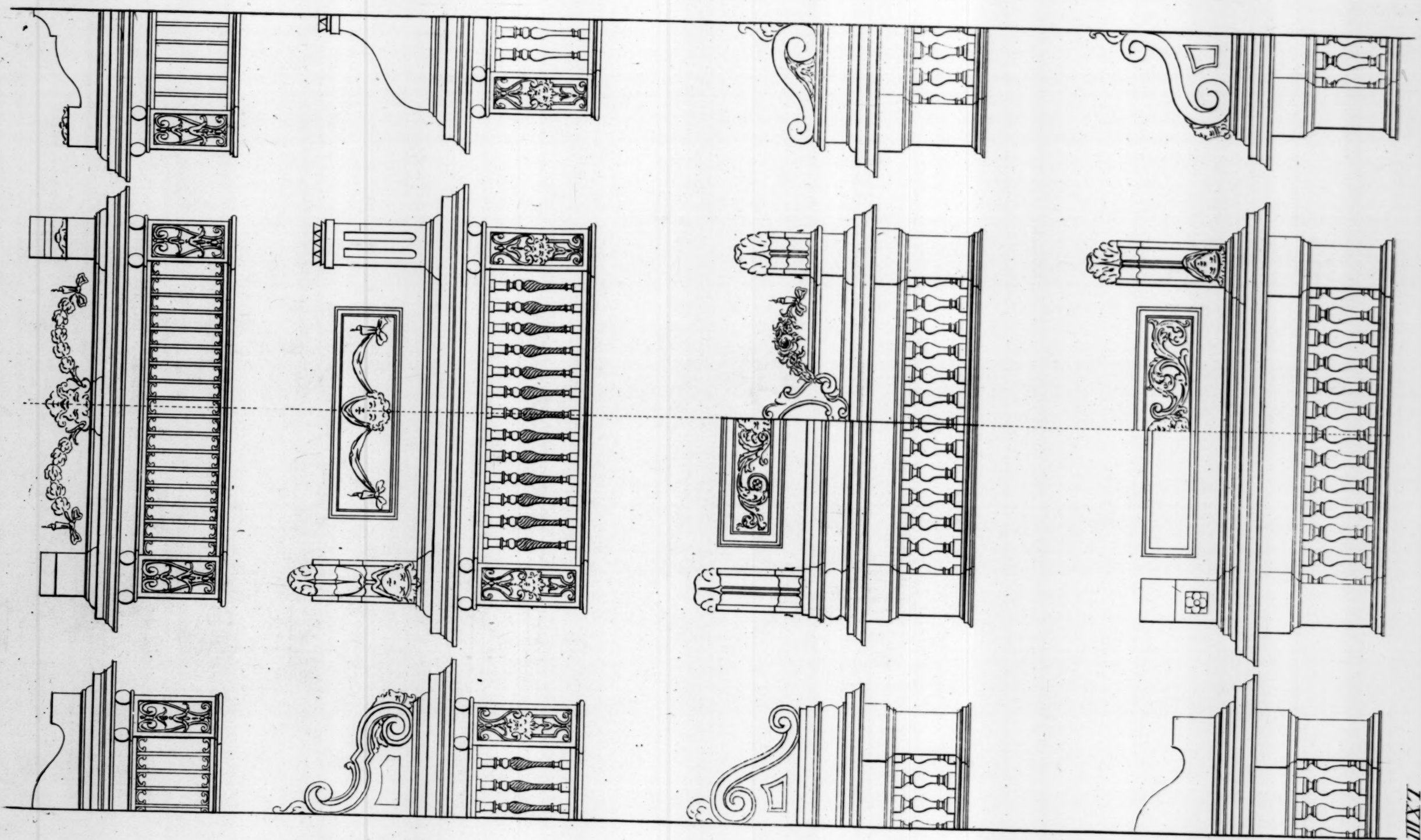


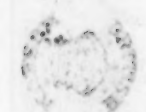


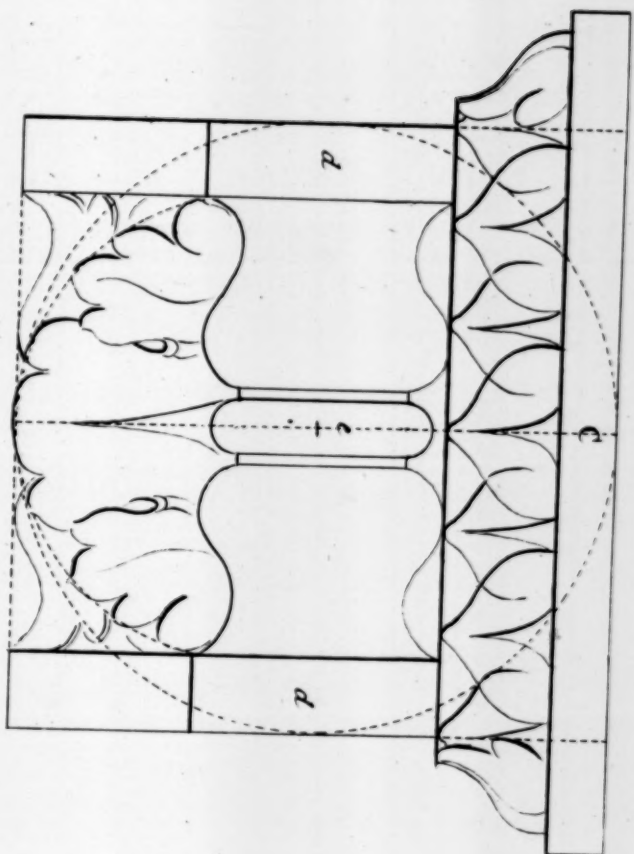
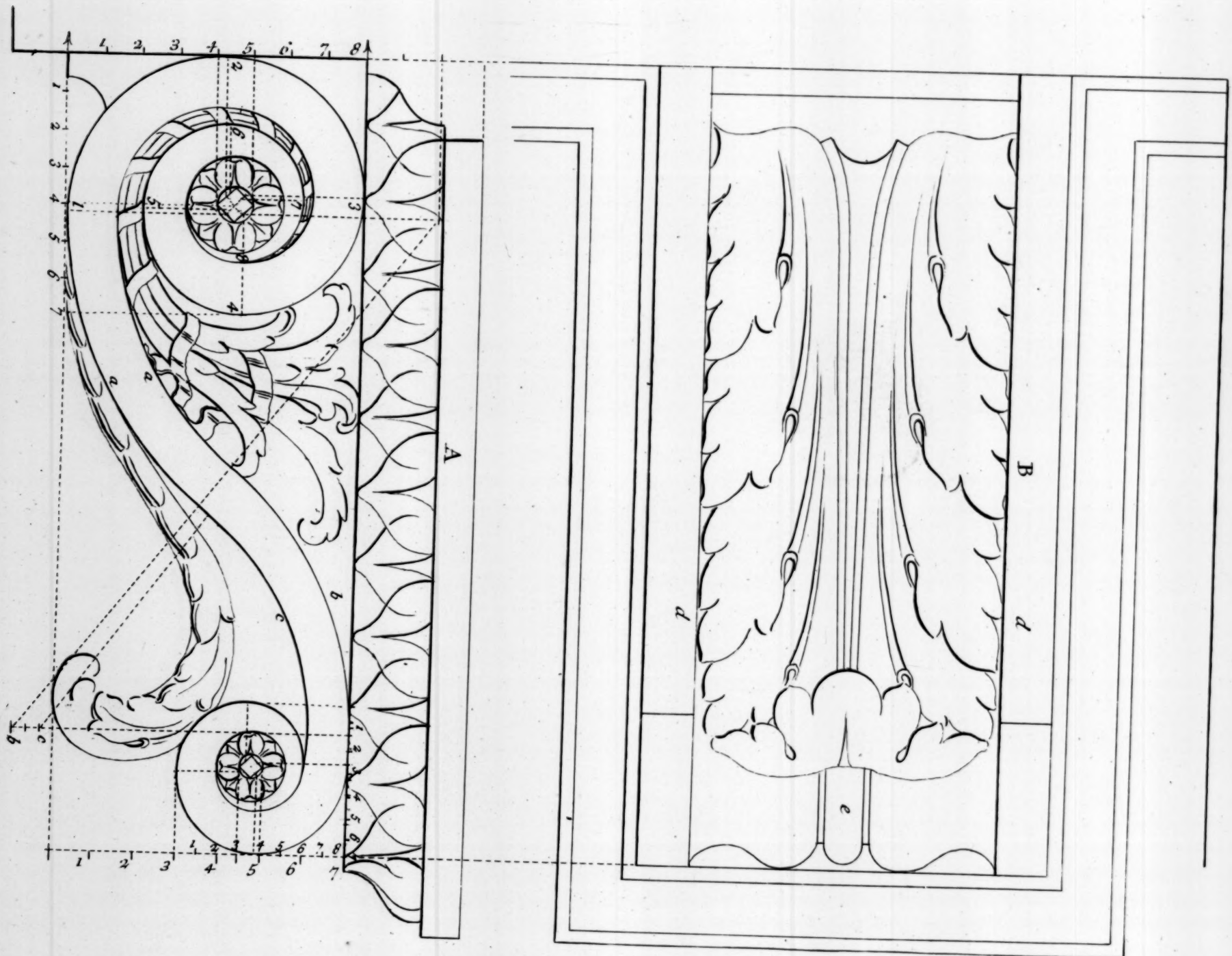














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